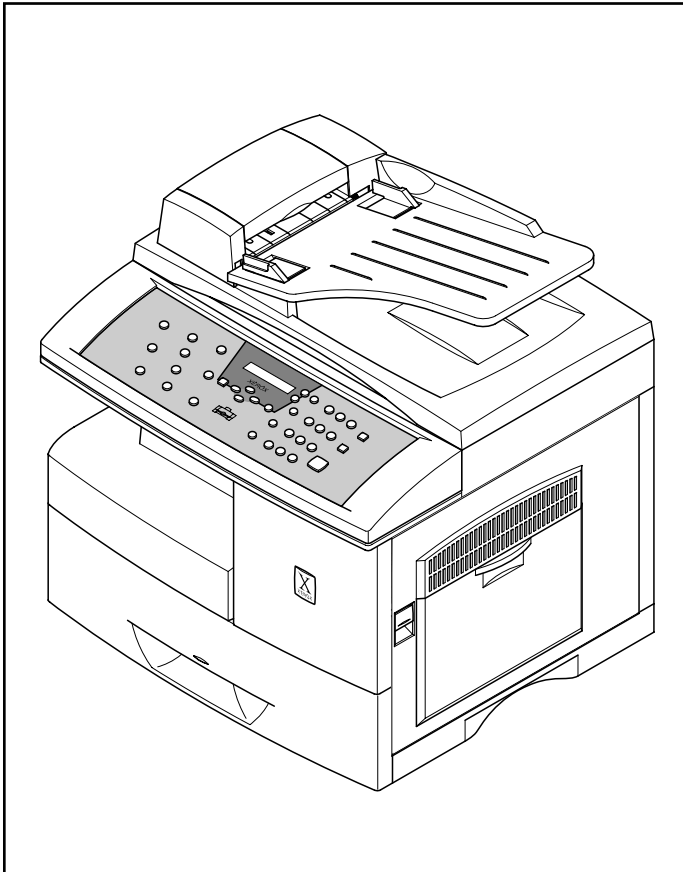


FACSIMILE

WC-M15i Series

SERVICE **MANUAL**

FACSIMILE



Contents

1. Precautions
2. Specifications
3. Circuit Description
4. Disassembly
5. Troubleshooting
6. Exploded Views and Parts List
7. Electrical Parts List
8. Block Diagram
9. Connection Diagram
10. Schematic Diagrams

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International and/or domestic law. -

1. Precautions

1-1 Safety Precautions

Read each caution carefully:

1. Do not use this printer near water or when exposed to inclement weather.
2. Do not place this printer on an unstable cart, stand or table; the product may fall, causing serious damage to the product.
3. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation and to protect the printer from overheating, do not block or cover any of these openings. Do not place the printer in an enclosure unless the enclosure provides adequate ventilation.
4. Never push objects of any kind into the printer through the cabinet ventilation slots as they may touch dangerous high voltage points, create short circuits, cause a fire, or produce an electrical shock. Never spill liquid of any kind on the printer.
5. Do not place the printer in a location where someone may trip on the cords.
6. Select a work surface that is large enough to hold the printer.
7. Position the printer within six feet of the computer and within five feet of an electrical outlet.
8. Operate this printer using the power source (110V, 220V, etc) indicated on the marking label. If you are not sure of the type of power source available, consult your dealer or local power company.
9. If you need to use an extension power cord with this printer, make sure that it uses a three-wire grounded cord and that the total ampere ratings for all of the products using the extension do not exceed the extension cord ampere rating. Also, make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
10. Do not allow anything to rest on the power cord or data communications cable.
11. Unplug this printer from the wall outlet before cleaning. Do not use liquid cleaners or aerosol sprays. Use a damp cloth for cleaning.
12. Do not touch the surface of the photo-sensitive drum as marks or scratches may impair print quality.
13. Do not expose the drum unit to direct light for prolonged periods.
14. Use only standard papers, OHP films, and approved envelopes. Feed OHP films through the manual feed slot only. See specifications for approved papers and envelopes.
15. Other than replacing consumables such as paper and toner, refer all questions to qualified service personnel.


LASER STATEMENT (LASERTURVALLISUUS)

WARNING : NEVER OPERATE AND SERVICE THE PRINTER WITH THE PROTECTIVE COVER REMOVED FROM LASER/SCANNER ASSEMBLY. THE REFLECTIVE BEAM, ALTHOUGH INVISIBLE, CAN DAMAGE YOUR EYES.

Class 1 laser product

Luokan 1 laserlaite
Klass 1 laser apparat

Allonpituus 770-795nm
Teho 0.3mW±0.03mW

	CAUTION	INVISIBLE LASER RADIATION WHEN THIS COVER OPEN. DO NOT OPEN THIS COVER.
	VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEOFFNET. NICHT DEM STRAHL AUSSETZEN.
	ATTENTION	REYONNEMENT LASER INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGERUSE AU FAISCEAU.
	ATTENZIONE	RADIAZIONE LASER INVISIBLE IN CASO DI APERTURA. EVITARE L'ESPOSIZIONE AL FASCIO.
	PRECAUCION	REDIACION LASER INVISIBLE CUANDO SE ABRE. EVITAR EXPONERSE AL RAYO.

CAUTION : Avoid exposure to invisible laser radiation when the development unit is not installed.

1-2 Servicing Precautions

Note : Requirements for AC power are described on the label affixed to the rear of the printer. Check the AC voltage rating requirement before use.

1. Before disassembly, pull the power plug from the AC power connector.
2. To avoid spilling toner inside the machine, do not turn the printer over or on its side before removing the developer cartridge.
3. Faulty installation of DRAMs may cause permanent damage to the Laser Printer.
4. Use only +5V power for video controller-related circuitry.
5. When replacing parts, use only the same type of part as the original. Replacing components with a second vendor's part may cause faulty operation.
6. Check the insulation between the blades of the AC plug and accessible conductive parts (examples : metal panels and input ports).
7. **Insulation Checking Procedure:**
Disconnect the power cord from the AC power source. Connect an insulation resistance meter (500V) to the blades of the AC plug.
The insulation resistance between each blade of the AC plug and accessible conductive parts (see left) should be greater than 1 megaohm.
8. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.
9. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3 ESD Precautions

Some semiconductor ("solid state") devices are easily damaged from static electricity. Such components commonly are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits (ICs), Large-Scale Integrated circuits (LSIs), some field-effect transistors, and semiconductor chip components. The following techniques will reduce the occurrence of component damage caused by static electricity:

<p>CAUTION : Be sure the power is off to the chassis or circuit board, and observe all other safety precautions</p>
--

charge to damage ESDs.

1. Immediately before handling any semiconductor components assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist strap device. (Be sure to remove the strap before applying power to the unit under test to avoid potential shock.)
2. After removing ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a ground-tip soldering iron when soldering or desoldering ESDs.
5. Use only anti-static solder removal device. Some solder removal devices are not rated as "anti-static;" these can accumulate sufficient electrical

2. Specifications

Note: It is subject to change without notice.

Item	Specification & Description										
Engine	MLE-6000										
Print Speed	12PPM (A4 Size, 5% Character Pattern)										
Resolution	True 600 x 600 dpi, 1200 dpi class RET										
Source of Light	Laser Diode (LSU:Laser Scanner Unit)										
Print Method	Non-impact Electrophotography										
Feed Method	Cassette & Manual, Option Feeder										
Paper Handling (input)	<p>*Size</p> <p>(1) Standard : A4, Letter, Legal, B5, Executive, Folio</p> <p>(2) Envelope : MP Tray only</p> <table border="1"> <tr> <th>Paper Type</th><th>Paper size(mm²)</th></tr> <tr> <td>Monarch</td><td>98.5 x 190.5</td></tr> <tr> <td>Com-10</td><td>104.9 x 241.3</td></tr> <tr> <td>Intl-DL</td><td>110 x 220</td></tr> <tr> <td>Intl C5</td><td>162 x 229</td></tr> </table> <p>(3) Universal type</p> <p>Length : 150 ~ 356 mm</p> <p>Width : 90 ~ 216 mm</p> <p>*Weigh : For Cassette, 60 ~ 90 g/m²</p> <p>For MPF, 60 ~ 143 g/m²</p> <p>*Recommended Paper</p> <p>USA : X400, X4024, , BOISECASCADE</p> <p>EC : REFLEX, ADAGIO</p> <p>Transparancies : 3M(CG3300 or 3360)</p> <p>Label : AVERY 53XX series</p>	Paper Type	Paper size(mm ²)	Monarch	98.5 x 190.5	Com-10	104.9 x 241.3	Intl-DL	110 x 220	Intl C5	162 x 229
Paper Type	Paper size(mm ²)										
Monarch	98.5 x 190.5										
Com-10	104.9 x 241.3										
Intl-DL	110 x 220										
Intl C5	162 x 229										
Paper Handling (output)	Face Down : 250 sheets, Face Up : 10 sheets										
Feed Capacity	<p>Cassette : 250 sheets of paper (75g/m²)</p> <p>MPF : 100 sheets of paper (A4)</p> <p>30 sheets of transparencies</p> <p>10 envelopes or card stocks</p> <p>25 paper labels</p> <p>Option Cassette : 250 sheets of paper</p>										
Warm-up time	50 seconds or less (23°C, 50%)										
First Print Time	14 seconds or less (Fast Mode)										
Power Rating	AC100~120V/ 220~240V(±15%), 50/60Hz (±3%)										
Power Consumption	During Printing : 300WH (average)										
Power Saving	During Sleep : Less than 30W										
Consumption	Less than 30W during 1 hour when it turned on										
Certification & Compliance	C-UL, TUV, FCC, CDRH, CE, CB										
Acoustic Noise	Stand by : Less than 36dB, Operating : Less than 49dB										
Toner Supply	Print Cartridge										

Specifications

Item	Specification & Description
Expected Life Span	150,000 sheets
Operating Environment	Temperature : 10~30°C, Humidity : 20~80%RH
Storage Environment	Temperature : 0~35°C, Humidity : 10~90%RH
Weigh	Net : Max 11Kg, Gross : 12Kg
External Dimension	420 (W) x 368 (D) x 220 (H)mm
Print Cartridge	Life Span : 6,000 pages, 5% Pattern Developing : Non-magnetic Contact Developing Charging : Conductive Roller Charging Density Adjustment : 3 step (Light, Medium, Dark) Toner Supply Method : Exchanging the Developer Toner Checking Sensor : None Transfer System : Conductive Roller Transfer Fusing System : Temperature & Pressure Ozone Emission : Less than 0.1 PPM
Emulation	PCL5e,PCL6, optional PostScript Level 2 Compatible
Font	1 bitmap 45 scalable (35 intelligent, 10 truetype)
CPU	Power PC 603e (clock speed 80MHz)
RAM Memory	Standard 4M byte (16M bit x 2) Option SIMM Module ; 4, 8, 16, 32,64M byte *Refer to Operator's Guide for instructions on SIMM installation.
ROM	4M byte (8M bit x 2 : Program) Flash Memory
EEPROM	512 bytes
Interface	Bidirectional Parallel Standard - IEEE 1284 COMPATIBLE MODE - IEEE 1284 NIBBLE MODE - IEEE 1284 BYTE MODE - IEEE 1284 ECP WITHOUT RLE - IEEE 1284 ECP WITH RLE USB Interface Standard - USB 1.0 compliant - 12Mbps 1 port Serial/Localtalk Interface Optional Serial (RS-232C) - 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 1152bps - XON/XOFF, DTR/DST Protocol - Rubust XON for XON/XOFF LOCALTALK - Macintosh Host Interface 230.4KBPS, SDLC, FMO Coding, RS-232C Network Interface 100--Base -Tx or 10 Base T Autoselect
Interface Switching	Automatic (Serial & Parallel)
Interface Time Out	5 min (max.)

3. Reference Information

3-1 Abbreviations and Acronyms

Tables 3-1-1 and 3-1-2 list abbreviations and acronyms which may be found in this service manual.

Abbreviations

Abbr	Definition	Abbr	Definition
amps	amperes	motor_pa	Motor phase A
ass'y	assembly	motor_pb	Motor phase B
badac	bad access	mpx	multiplex
bps	bits per second	neg	negative
CBUSY	Command busy	od	open drain
CCLK	Command clock	OSC	oscillator
clk	clock	OUT	output
cm	centimeter(s)	pba	printed board assembly
CMSG	Command message	pcb	printed circuit board
CON	connector	pix	picture
DS	Data Strobe	Pmotor	LSU motor on
EBUSY	Engine Status busy	pos	positive or position
EMSG	Engine Status message	pot	potential
Exitpap	Exit paper	ppm	print pages per minute
GND	ground	PRINT	Print command
HLDA	hold acknowledge	psync	page synchronization
hldar	hold acknowledge received	pwr	power
HLDR	hold request	Q_Lamp	Quenching Lamp
HOR	horizontal	qty	quantity
HSYNC	Horizontal sync	READY	Engine print ready
I/O	Input and Output	sw	switch
in	inch(es) or input	tach	tachometer
INT	Interrupt	thvea	Transfer high voltage Enable
INTA	Interrupt Acknowledge	Vcc	collector supply voltage (dc)
INTR	Interrupt Request	VDI	Video data from controller
lb.	Pound(s)	VDO	Video data output
LDON	laser Diode On	vert	vertical
lin	linearit	Vp-p	peak-to-peak voltage
lock	bus lock	VR	variable resistor
Lready	LSU power ready	mm	millimeter(s)

Acronyms

Acronym	Definition	Acronym	Definition
ADC	Analog to Digital Converter	LED	Light Emitting Diode
ALE	Address-Latch Enable	LSU	Laser Scanner Unit
ASCII	American Standard Code for Information Interchange	MHV	Main High Voltage
BIOS	Basic Input/Output System	MPU	Micro Processor Unit
BPS	Bits Per Second	NC	No Connection
CMOS	Complementary Metal Oxide Semiconductor	PCB	Printed Circuit Board
CPU	Central Processing Unit	PCU	Printed Control Unit
DCU	Diagnostic Control Unit	PLCC	Plastic Leaded Chip Carrier
DMA	Direct Memory Access or Dynamic Memory Access	PPM	Page Per Minute
DMAC	Direct Memory Access Controller	PQFP	Plastic Quad Flat Package
DOS	Disk Operating System	PWM	Pulse Width Modulation
DPI	Dots Per Inch (resolution)	QFP	Quad Flat Package
DRAM	Dynamic Random Access Memory	RAM	Random Access Memory
DVM	Digital Voltmeter	ROM	Read Only Memory
EEPROM	Electrically Erasable Programmable Read Only Memory	SCC	Serial Communications Controller
ICU	Image Control Unit	SMPS	Switching Mode Power Supply
		SOP	Small Outline Package
		THV	Transfer High Voltage
		TS	Tri-State
		VCU	Video Control Unit

3-2 Chip Replacement (SMD)

3-2-1 Precautions for Chip Replacement

1. Do not directly touch any portion of the part with the soldering iron. ICs, especially TSOPs, are easily damaged by heat.
2. Use care with the soldering iron tip and avoid rapidly heating parts. Some parts can be damaged by sudden heating. Preheat the part at about 100°C for several minutes before installing it.
3. Use a soldering tip temperature of about 240°C. For larger parts, use a slightly higher temperature (about 280°C).
4. The thin (0.3mm) solder for miniature parts does not contain adequate flux. Supplementary flux is thus needed in most cases.

Computer, OA and A/V systems are manufactured using flux which can be cleaned by water. When you replace the part or when troubleshooting, use proper flux and solder which can be cleaned by water.

Improper flux may cause the soldering area to corrode and may cause a fatal system error.

5. Use care not to damage the circuit pattern, especially when desoldering. Because of the many pins, cleanliness of the pattern is extremely important after removing an IC.
6. Use care to avoid solder bridges. Remove any bridges that occur.
7. Position the part carefully. This also affects the soldering operation. Be very precise in positioning the IC. Soldering opposite pins first holds the IC in place and makes soldering the other pins easier.
8. Do not reuse removed parts.
9. Check for solder joints, especially miniature parts with small lead.
10. A defective trimming resistor cannot be adjusted externally. Replace with an ordinary variable resistor.
11. Always inspect the work with a magnifying lens. Check after installing cold solder joints, etc.

3-2-2 Tools for Chip Replacement

The tools for chip replacement are as follows:

- Thin tip type soldering iron.
- Small flat-blade tip type soldering iron
- Special desoldering tip iron
- Air-blower Unit
- Flat Package Pick-up
- Flux that can be cleaned by water
- 0.3mm thin solder that can be cleaned by water
- Desoldering wire
- Tweezers

3-2-3 Chip Resistor and Chip Capacitors

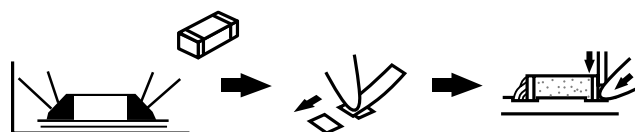
TYPES

The types of chip resistors and chip capacitor are as follows:

- Thick Film Chip Resistors
- Carbon Film Chip Resistors
- Metal Film Chip Resistors
- Chip Ceramic Capacitors
- Chip Trimming Resistors

REMOVING

1. Using Two soldering irons:
 - a. Use thin tip soldering irons
 - b. Use soldering tip temperature of about 280°C.
 - c. Simultaneously heat both ends of the part.
 - d. While heating, grasp the part with the tips of the soldering irons and remove it.
 - e. Use desoldering wire to completely remove the old solder from the part location on the board. A clean pattern for installing the new part is very important.



INSTALLING

1. Clean the area where the new part is to be mounted.
2. Apply a water soluble flux.
3. Set part correctly into position and prevent it from shifting.
4. Bring the soldering iron tip close to the part contact without actually touching it. Melt thin (0.3mm) solder between the tip and part so that it flows into the part contact.
5. Check work quality with a magnifying lens.

3-2-4 Chip Tantalum Capacitors and Chip filters

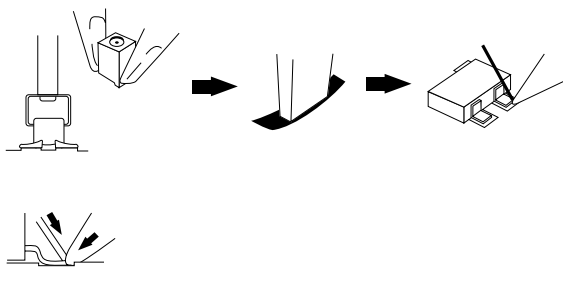
TYPES

The types of chip tantalum capacitors and chip filters are as follows:

- Chip Inductors
- Chip Tantalum Capacitors
- Chip Tantalum Electrolytic Capacitors
- Chip Aluminum Electrolytic Capacitors
- Chip Transformers
- Chip Filters

REMOVING

1. Using a special desoldering iron:
 - a. Select soldering tip according to part size.
 - b. Bring the tip into contact with the solder points.
 - c. When the solder melts, remove the part.
 - d. Remove the old solder with desoldering wire.
2. Using a special desoldering iron:
 - a. Use small flat-blade tips.
 - b. Heat both ends of the part simultaneously.
 - c. When the solder melts, grasp and remove the part with the soldering iron tips.
 - d. Remove the old solder with desoldering wire.



INSTALLING

1. Clean the area where the new part is to be mounted.
2. Apply a water soluble flux.
3. Set part correctly into position and prevent it from shifting.
4. Use a sharp soldering iron tip. Bring the tip close to the part contact without actually touching it. Melt thin (0.3mm) solder between the tip and part so that it flows into the part contact.
5. Check work quality with a magnifying lens.

3-2-5 Chip VRs, Chip Trimmer Capacitors, Diode and Tr.

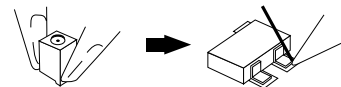
TYPES

The types of parts are as follows:

- Chip VRs
- Chip Trimmer Capacitors
- Diode
- Transistors

REMOVING

1. Using two soldering irons.
 - a. Use small-flat-blade tips.
 - b. Heat the leads of the part simultaneously.
 - c. When the solder melts, grasp and remove the part with the soldering iron tips.
 - d. Remove the old solder with desoldering wire.



INSTALLING

1. Clean the area where the new part is to be mounted.
2. Apply a water soluble flux.
3. Set part correctly into position and prevent it from shifting.
4. Use a sharp soldering iron tip. Bring close to the part contact without actually touching it. Melt thin (0.3mm) solder between the tip and part so that it flows into the part contact.

3-2-6 Chip ICs**TYPES**

The types of chip ICs are as follows:

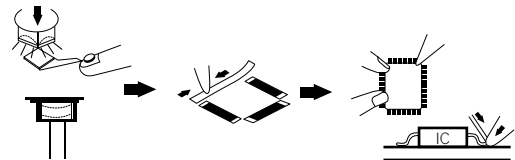
1. SOP (Small Outline Package) IC
2. SSOP (Shrink Small Outline Package) IC
3. VSOP (Very Small Outline Package) IC
4. QFP (Quad Flat Package) IC
5. VQFP (Very Quad Flat Package) IC
6. PLCC (Plastic Leaded Chip Carrier) IC
7. TSOP (Thin Small Outline Package) IC

REMOVING

1. Using special desoldering iron:
 - a. Select the tip according to the size shape of the IC.
 - b. "Tin" the tip with a small amount of the IC leads.
 - c. Set the tip squarely over the IC leads.
 - d. When the solder melts, carefully twist the iron.
 - e. Raise and remove the IC.
2. Using a shaped air-blower unit:
 - a. Select the correct nozzle.
 - b. Select the temperature and air-blow (suggested : temperature : 7, air-blow:4)
 - c. Engage the IC removing tool.
 - d. Use the air-blow to preheat the IC for about 5 seconds, then heat with the nozzle until the IC remove lifts the part from the board.

INSTALLING

1. Use desoldering wire to remove the previous solder
2. Clean the location.
3. Apply water soluble flux.
4. Position the IC and solder two pins at opposite sides.
5. Use a sharp tipped soldering iron and carefully solder each pin. (After gaining experience, a thicker tip can be used for better work efficiency)
6. Remove any solder bridges with desoldering wire.
7. Inspect the work with a magnifying lens.



3-3 Recommended Test Equipment

Samsung recommends the following equipment when servicing the Laser Printer.

Digital Multimeter	A digital multimeter with attached LED or LCD 4-digit Panel
Oscilloscope	A digitizing oscilloscope which can measure more than 100MHz
High Voltage Probe	A high voltage probe which can measure about less than 10KV
DCU (Diagnostic Control Unit)	DCU can be supplied from Samsung which can easily shows the engine's error status

Table 3-4-1 Equipment List

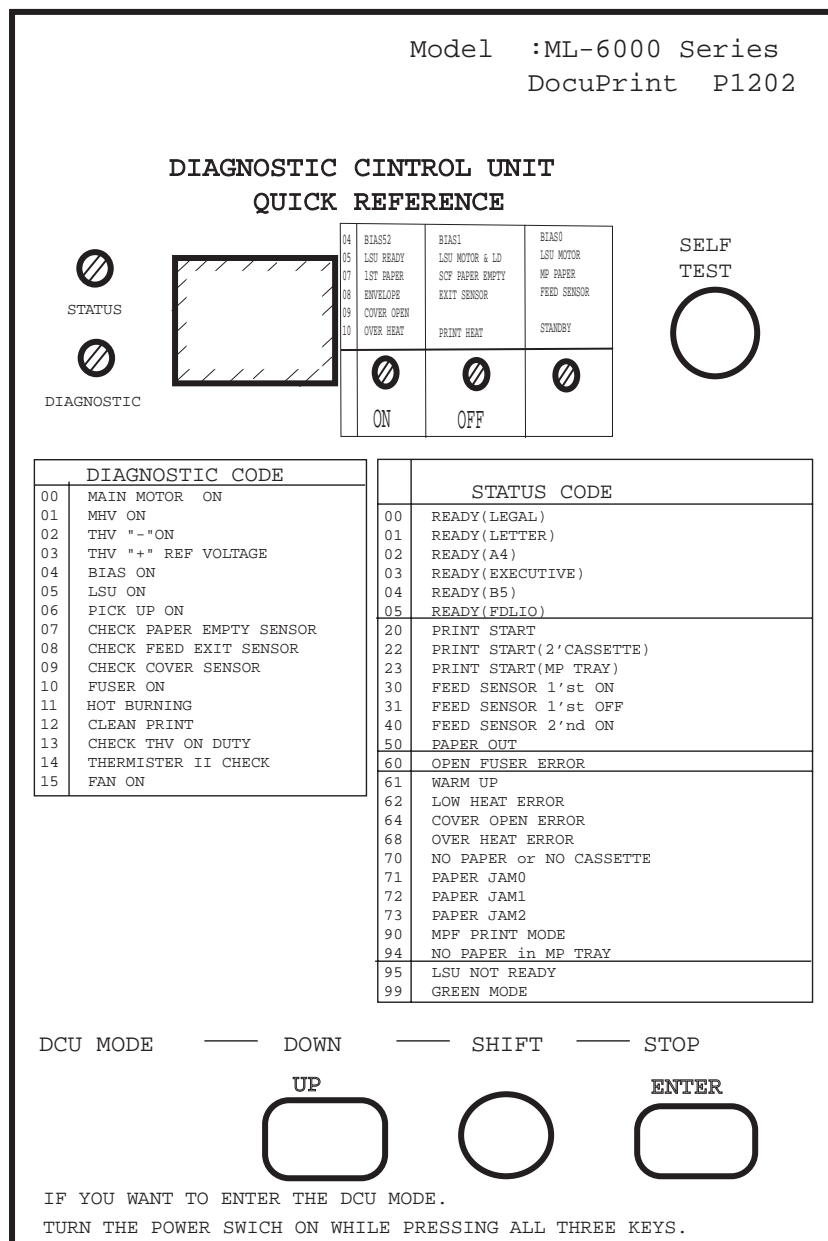


Figure 3-4-1 DCU

3-4 DCU Control

3-4-1 DCU Setup

- 1) Connect DCU to Controller Board Connector J6 (4 pins) or Engine Board CN2 (4pins).
- 2) To apply power, simultaneously press and hold down [DOWN], [SHIFT], and [STOP] keys. '78' is displayed.
- 3) After 2-3 seconds, release the keys. '00' is displayed.
- 4) Press [UP] or [SHIFT]+[DOWN] keys until the desired code number is displayed in the DCU display.
- 5) Press [ENTER] to begin operating.
- 6) Example : Select numbers '13' and '14' to adjust the electrophotography trigger voltage.
- 7) To end operation, press [SHIFT] and [STOP] keys.

3-4-2 DCU Diagnostic Mode

The DCU is used to diagnose the printer malfunction status.

Display	Diagnostic Code Description
00	MAIN MOTOR ON
01	MHV ON
02	THV(-) ON
03	THV(+) REFERENCE ON
04	BIAS ON
05	LSU ON
06	PICK UP ON
07	CHECK PAPPER EMPTY SENSOR
08	CHECK FEED , EXIT SENSOR
09	CHECK COVER SENSOR
10	FUSER ON
11	HOT BURNING
12	CLEANING PRINT
13	CHECK THV ON DUTY
14	THERMISTER II CHECK
15	FAN ON

3-4-3 DCU Error Status Code

DCU error code will indicate malfunction area of the machine.

Display	Error status
60	OPEN FUSER ERROR
62	LOW HEAT ERROR
68	OVER HEAT ERROR
64	COVER OPEN ERROR
70	NO PAPER or NO CASSETTE
71	PAPER JAM 0
72	PAPER JAM 1
73	PAPER JAM 2
95	LSU NOT READY

3-4-4 Error Solution

Display	Solution
60, 62, 68	<ol style="list-style-type: none"> 1. Measure the resistance of the AC connector on the Fuser. Normal resistance is 2-4 ohms for 110V, 6-8 ohms for 220V. 2. Check if the fuser lamp works properly. 3. Measure the resistance at Q101 on the engine board. If abnormal, replace Q101, Q3, PC151, Q8.
70	<ol style="list-style-type: none"> 1. Make sure that paper is loaded in the cassette. 2. Replace OP2 sensor (photo interrupter). 3. Check if the feed clutch works properly. 4. If abnormal, replace the feed clutch or Q4 on the engine board.
71	<ol style="list-style-type: none"> 1. Make sure that paper is loaded in the cassette. 2. Check for pick-up unit. If it is heavily worn, replace it with new one. 3. Replace OP1 sensor.
72, 73	<ol style="list-style-type: none"> 1. Make sure that the paper being used meets the specification. 2. Check if there is a paper jam in the fuser. 3. Replace OP1, OP3 on the engine board. 4. Check the fuser roller for any dirt. If dirty, clean the roller.
95	<ol style="list-style-type: none"> 1. Check for U205 on the engine board. 2. Replace LSU. 3. Measure the resistance at R62 and R8. If abnormal, replace them.

4. Disassembly and Reassembly

4-1 General Precautions on Disassembly

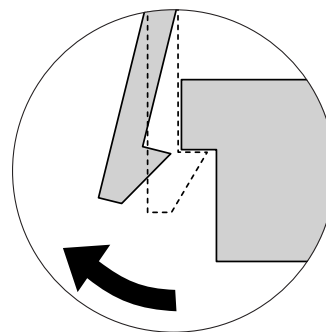
When you disassemble and reassemble components, you must use extreme caution. The close proximity of cables to moving parts makes proper routing a must. If components are removed, any cables disturbed by the procedure must be restored as close as possible to their original positions. Before removing any component from the machine, note the cable routing that will be affected.

Whenever servicing the machine, you must perform as follows:

1. Remove the paper cassette(s), and the print cartridge. Do not expose the cartridge to direct room light or sun light, and be careful not to scratch the drum surface.
2. Turn the power switch off.
3. Unplug all the cables from the printer.
4. Replace with only an authorized component.
5. Do not force to open or fasten a plastic material component.
6. Be careful no obstacles are included when you reassemble components.
7. When you reassemble components, be careful small size components are located in place.
8. If you turn the machine over to replace some parts, toner or paper particles may contaminate the LSU window. Protect the LSU window with clean paper.

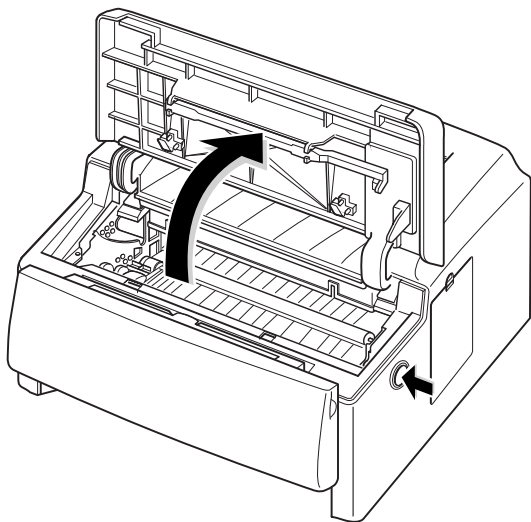
Releasing Plastic Latches

Many of the parts are held in place with plastic latches. The latches break easily; release them carefully. To remove such parts, press the hook end of the latch away from the part to which it is latched.

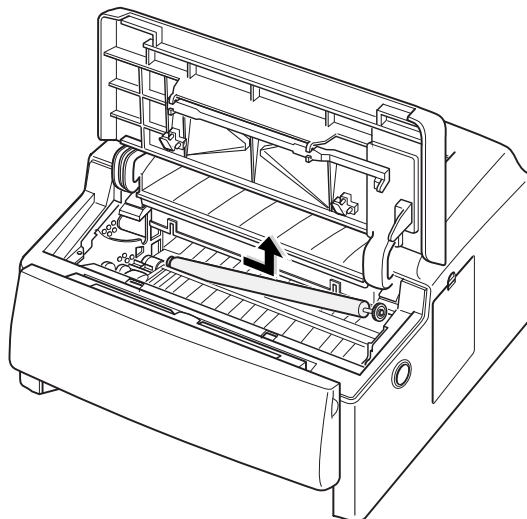


4-2 Transfer Roller

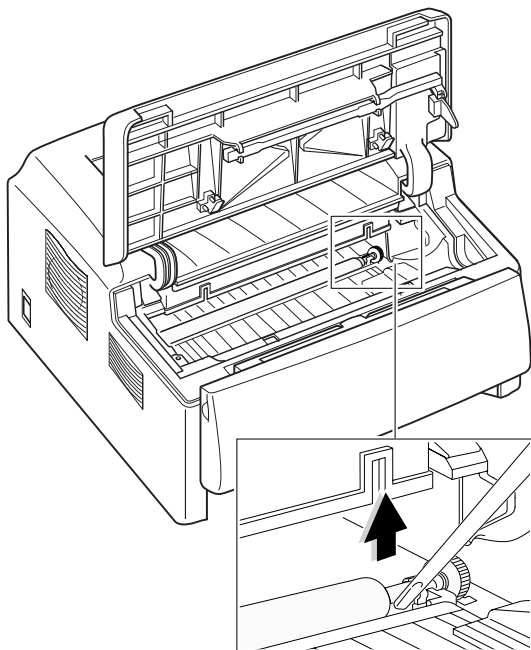
1. Press the cover open switch and raise the printer cover.



3. Pull the roller slightly to the right to release the left end of the roller, then take it out.

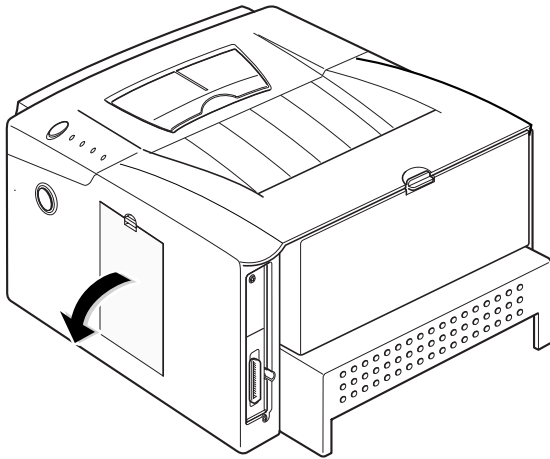


2. Use a phillips screwdriver to release the right end of the roller.

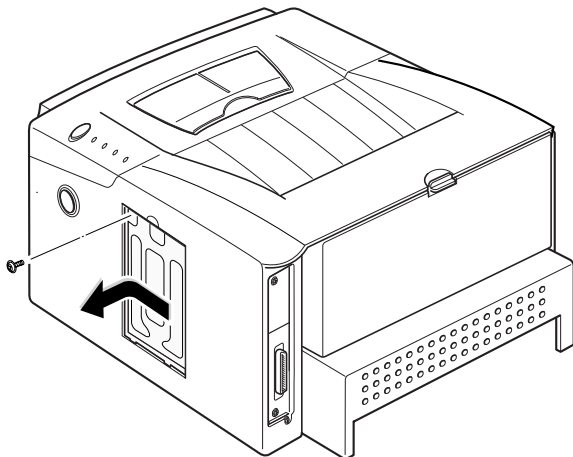


4-3 Controller Board

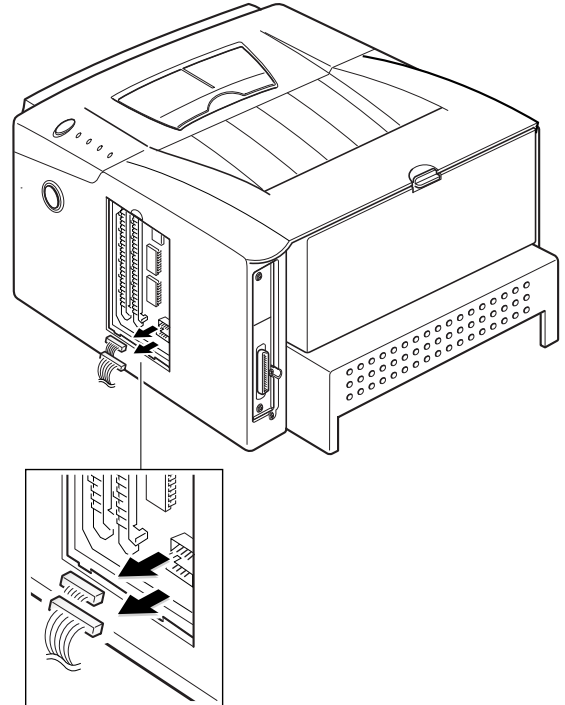
1. Remove the cover located at the right side of the printer.



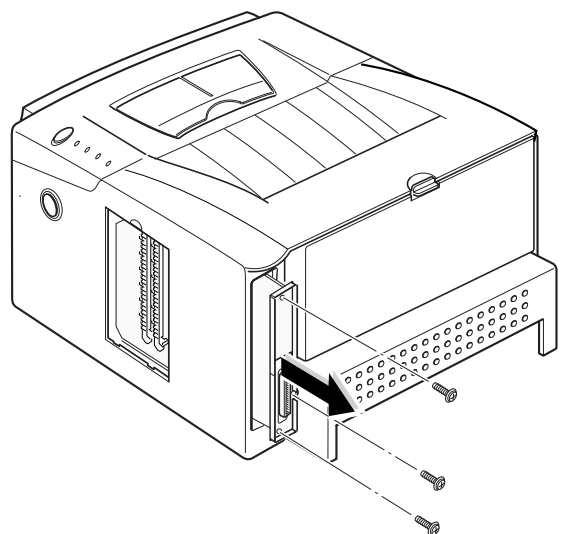
2. Remove one screw. Slide the shield cover in the direction of OPEN arrow marked on the cover, then remove the cover.



3. Unplug two connectors from the board.

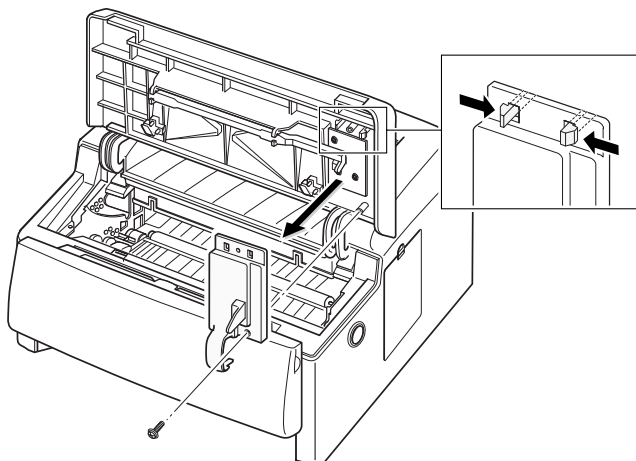


4. Remove three screws securing the board and pull the board out of the printer.

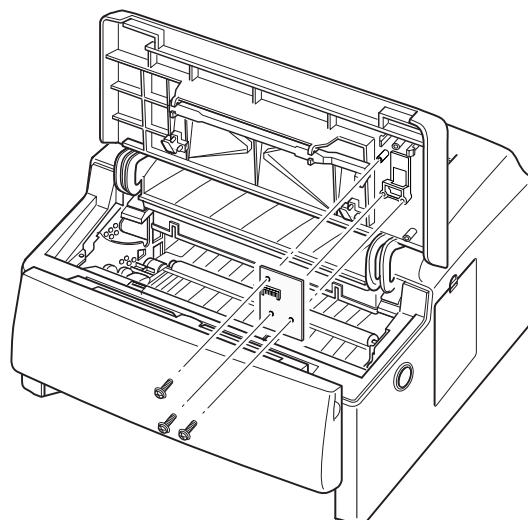


4-4 Panel Board

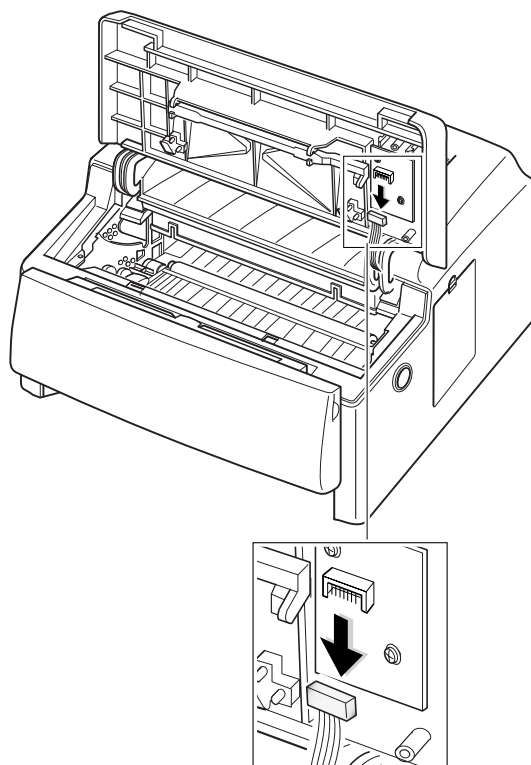
- 1 Press the cover open switch and raise the printer cover.
- 2 Remove two screws, unlatch the panel cap, then remove it.



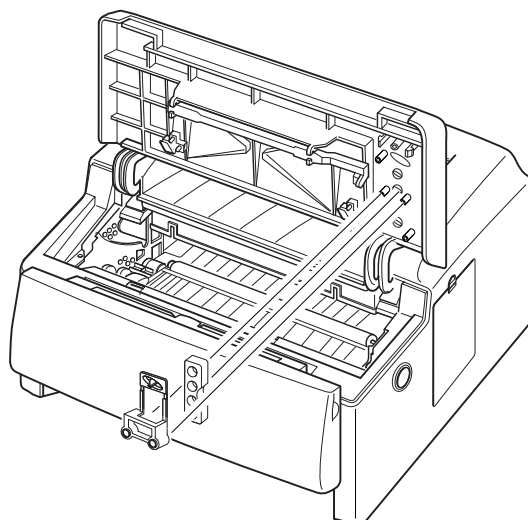
- 4 Remove three screws from the board, and remove the board.



3. Unplug one connector from the panel board.

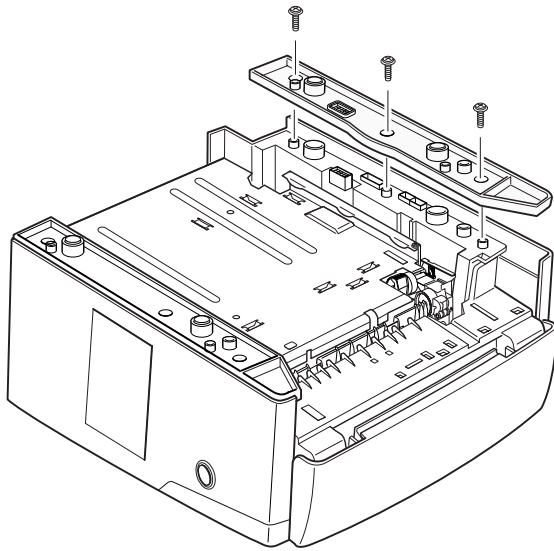


5. Remove the Window LED and button panel LED.

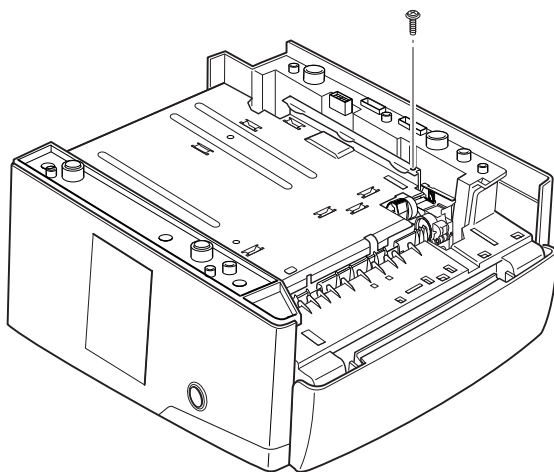


4-5 Pickup Assembly

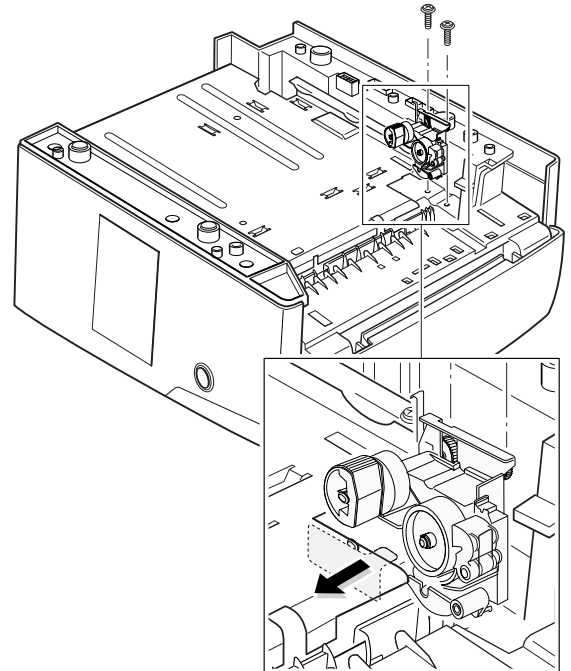
1. Turn the printer over. Remove three screws from the left base bracket, and take the bracket out.



2. Remove one ground screw.

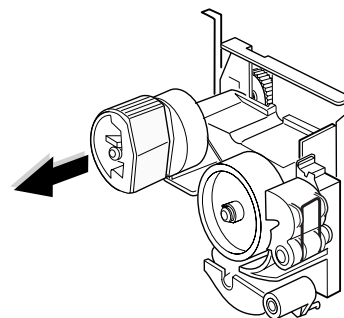


3. Remove two screws securing the pickup assembly and take the assembly out.

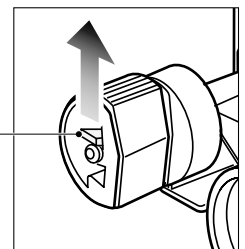


Push the solenoid if you have difficulty to remove the pickup assembly.

4. Check the pickup rubber wear. If the rubber is heavily worn, replace it with a new one.

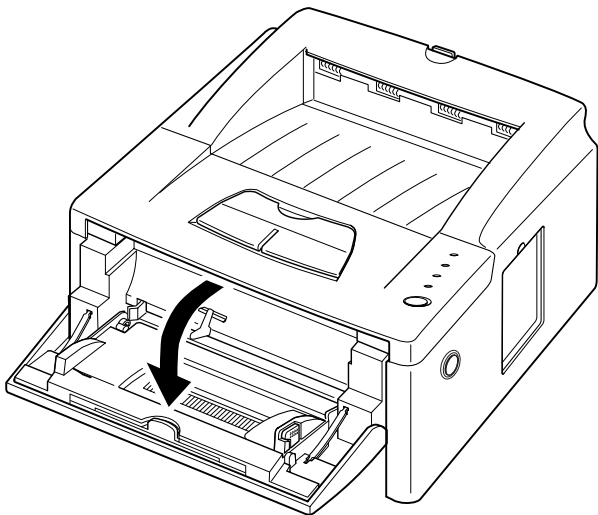


Squeeze this tab to remove the rubber.

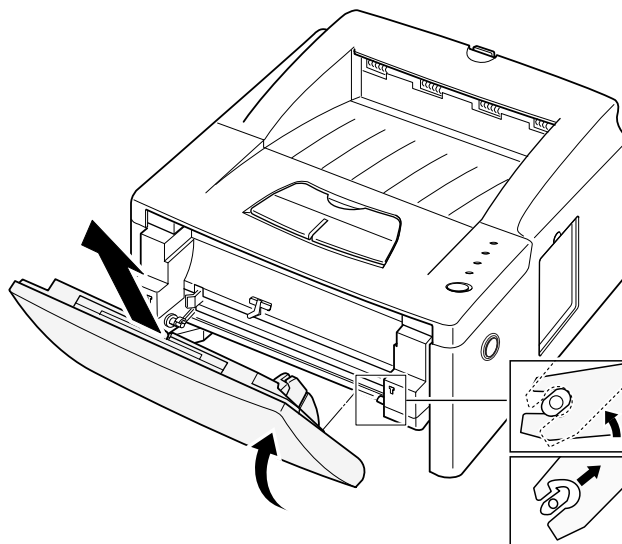


4-6 MP (Multi-Purpose) Tray

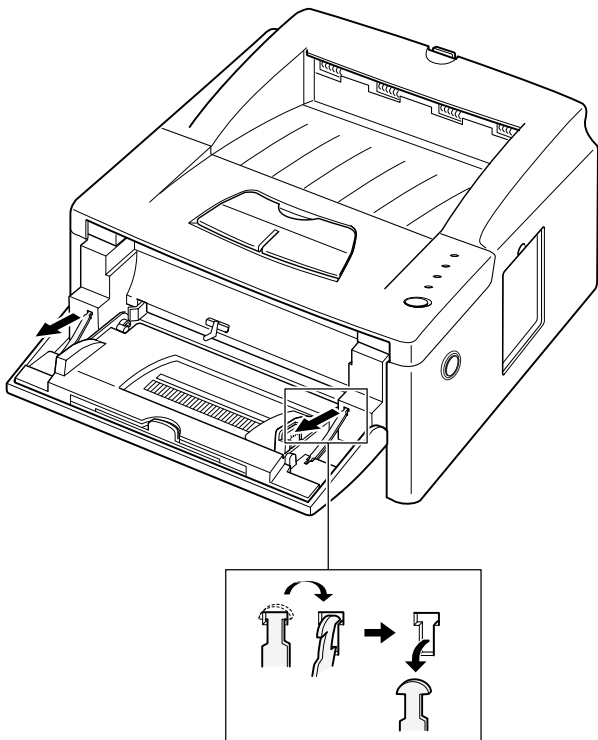
1. Open the MP tray.



3. Rotate the MP tray upward to a 45° angle to unlatch the both ends of the tray, then take it out.



2. Release two stoppers.

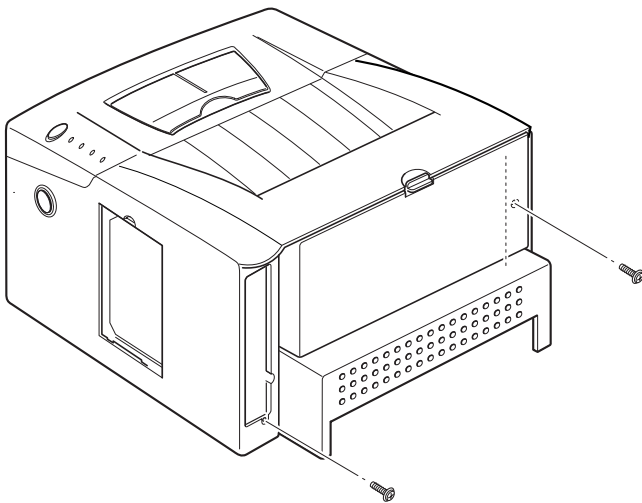


4-7 Main Cover

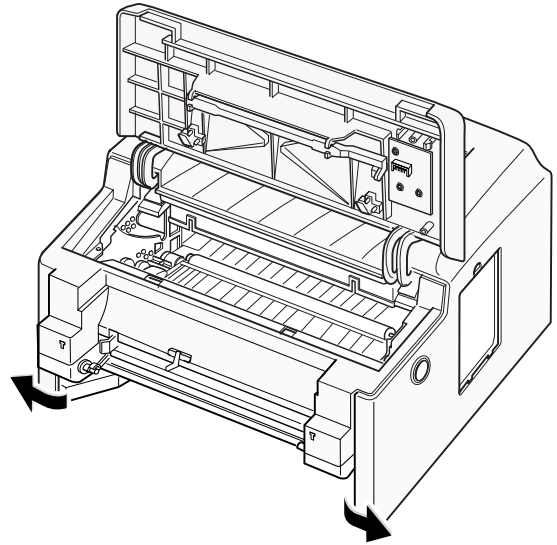
1. Before you remove the cover, you should remove:

- Controller Board (see page 4-3)
- Panel Board (see page 4-4)
- MP Tray (see page 4-6)

2. Remove two screws at the back of the printer.

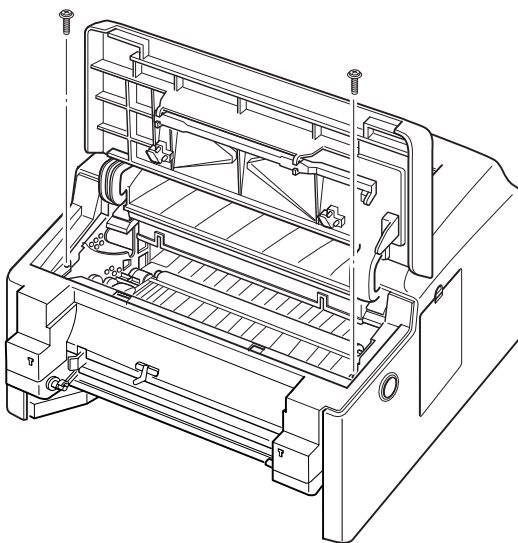


6. Unlatch the front ends of the cover.

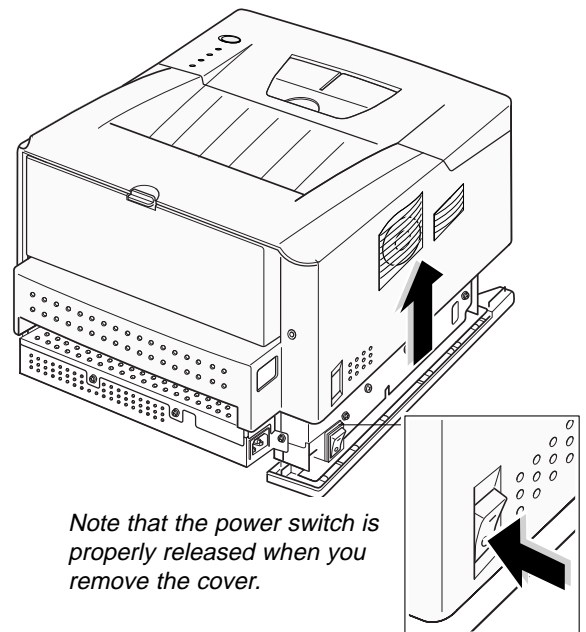


Note: When you reassemble the cover, push the empty actuator in. If not, the cover is not in place.

3. Open the printer cover, and remove two screws.



7. Slide the main cover upward, out of printer.



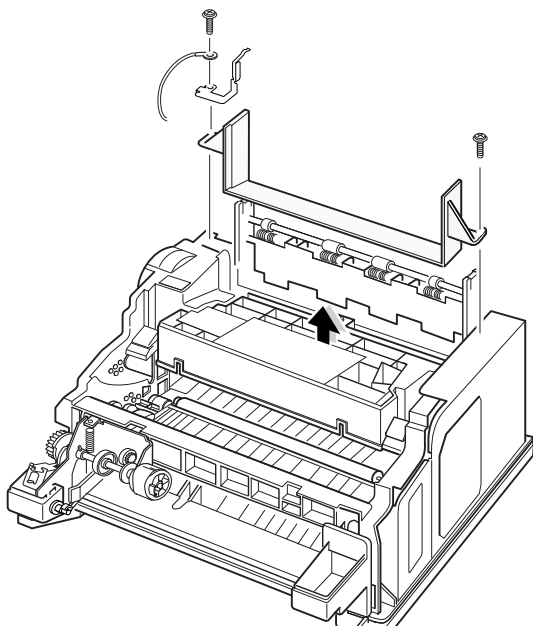
Note that the power switch is properly released when you remove the cover.

4-8 LSU

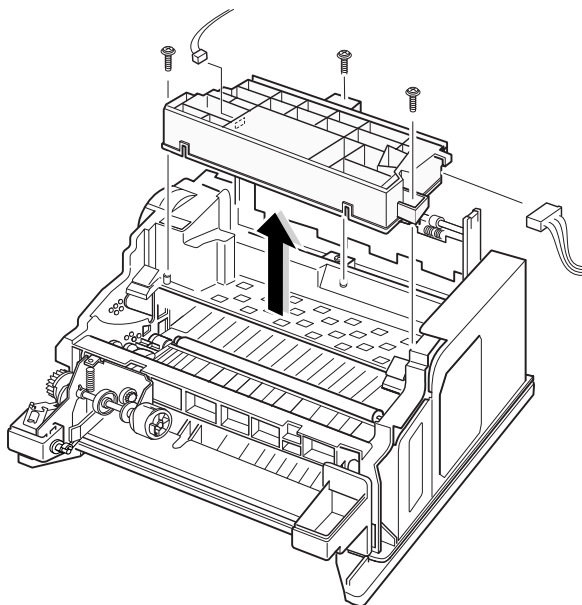
1. Before you remove the LSU, you should remove:

- Controller Board (see page 4-3)
- MP Tray (see page xx)
- Main Cover (see page 4-6)

2. Remove two screws securing the fuser cover, and remove the fuser cover.



3. Remove three screws, and remove the LSU. Then unplug two connectors from the LSU.

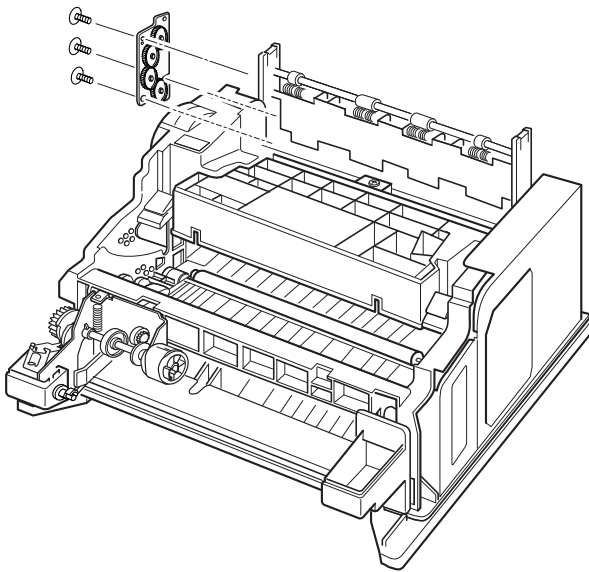


4-9 Exit Assembly

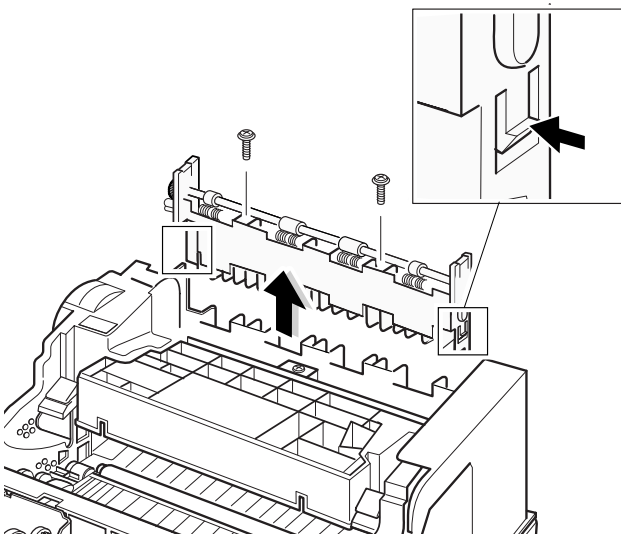
1. Before you remove the exit assembly, you should remove:

- Controller Board (see page 4-3)
- MP Tray (see page xx)
- Main Cover (see page 4-6)
- Fuser Cover (see page 4-10)

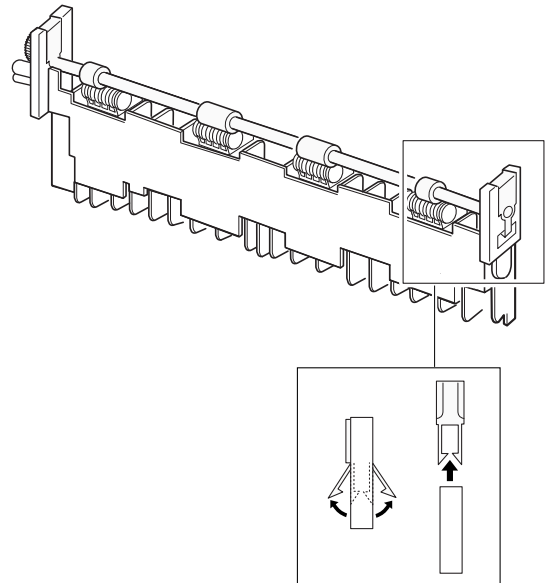
2. Remove three screws, and remove the bracket.



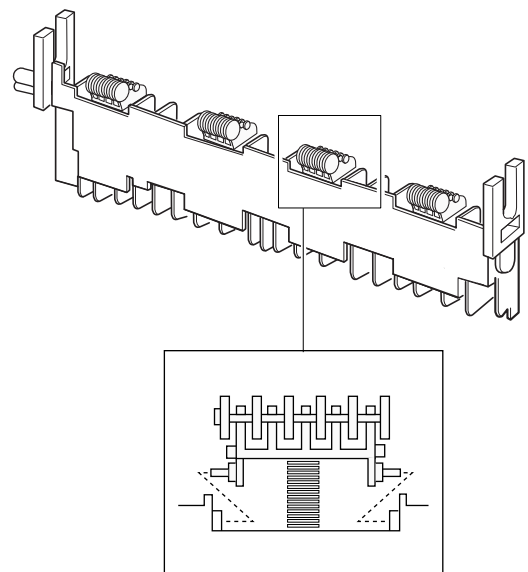
3. Remove two screws, unlatch the exit tray and take it out.



4. If you want to remove the roller shaft, unlatch both ends of the shaft and take it out.



5. If you want to remove the exit rollers, squeeze the bottom of roller and take it out.

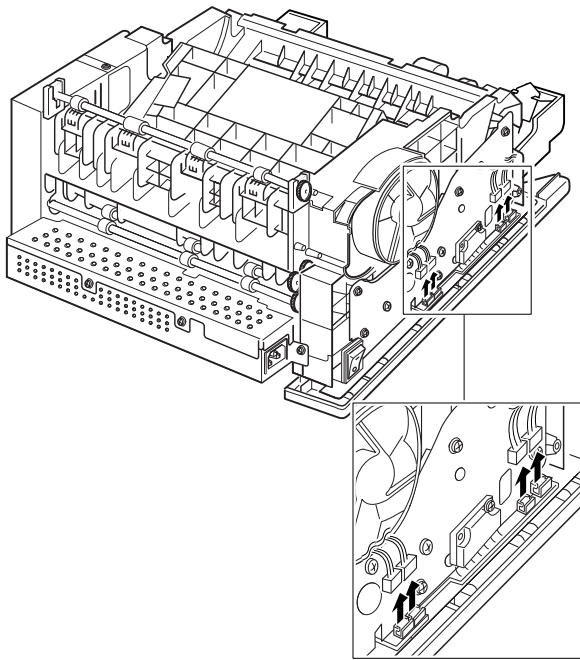


4-10 Drive Assembly and Fan

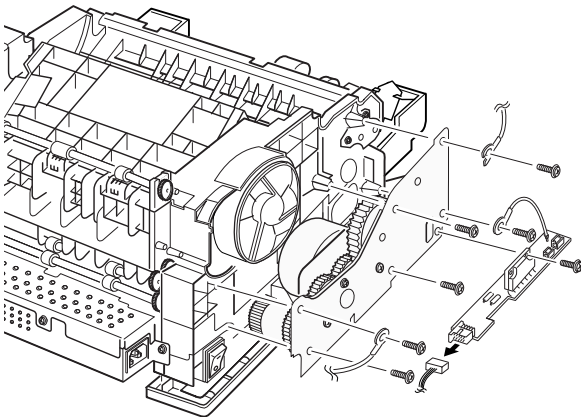
1. Before you remove the drive assembly or fan, you should remove:

- Controller Board (see page 4-3)
- Main Cover (see page 4-7)
- MP Tray (see page 4-6)

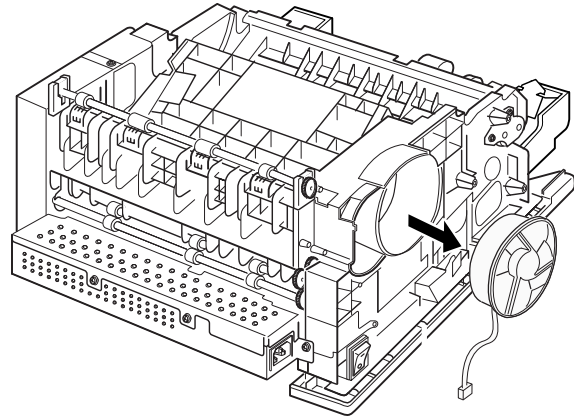
2. Unplug four connectors.



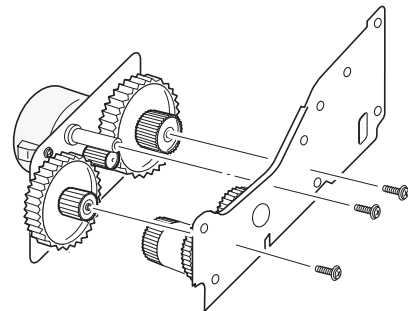
3. Remove seven screws securing the drive assembly from the gear bracket, and remove the drive assembly and motor drive board. Unplug one connector from the board.



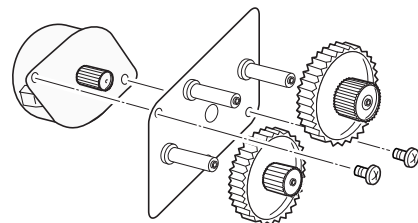
4. If you want to replace the fan, take it out.



5. If you want to remove the motor from the drive assembly, remove three gold screws securing the motor assembly to the gear bracket.



6. Remove the motor assembly. Remove two screws securing the motor to the motor bracket, then take the motor out.

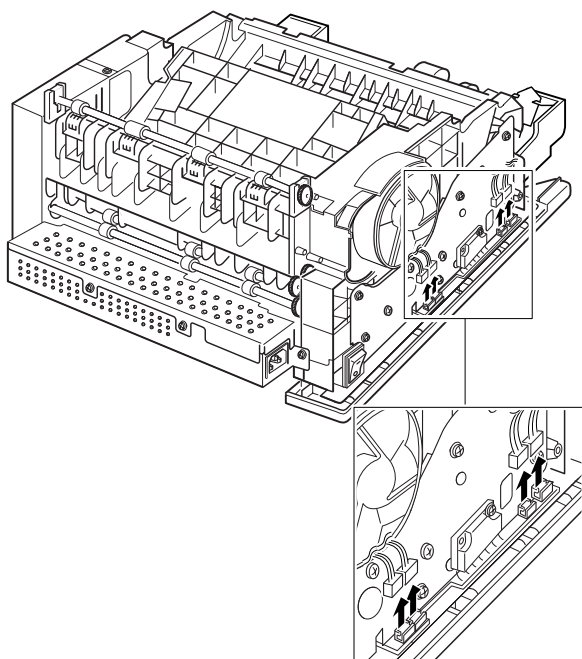


4-11 MP Plate Assembly

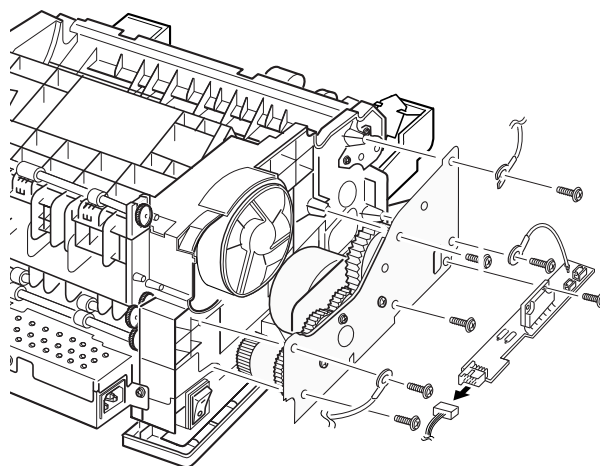
1. Before you remove the MP plate assembly, you should remove:

- Controller Board (see page 4-3)
- Main Cover (see page 4-7)
- MP Tray (see page 4-6)

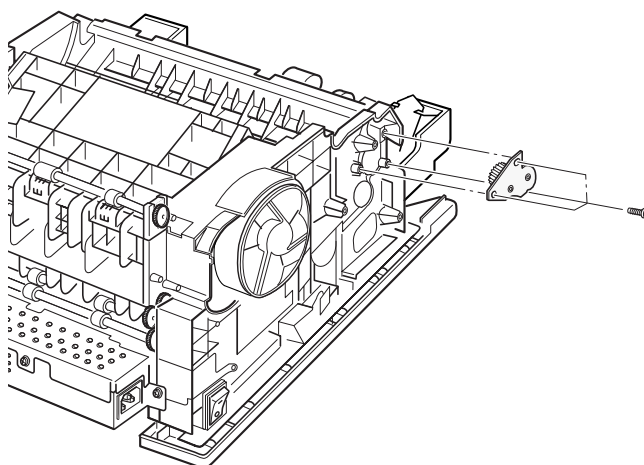
2. Unplug four connectors.



3. Remove seven screws securing the drive assembly from the gear bracket, and remove the drive assembly and motor drive board. Unplug one connector from the board.



4. Remove three screws, and remove the MP plate assembly.

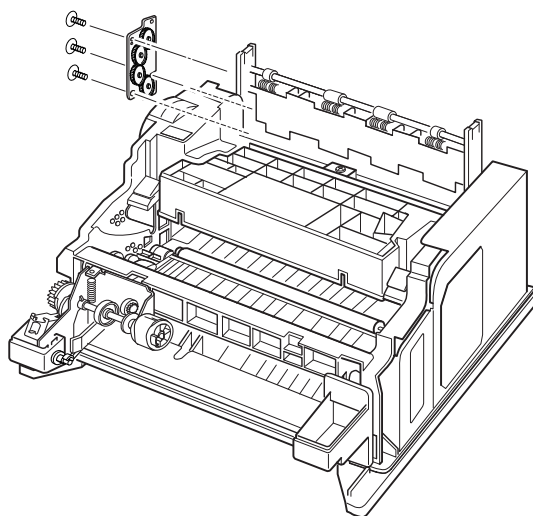


4-12 Fuser

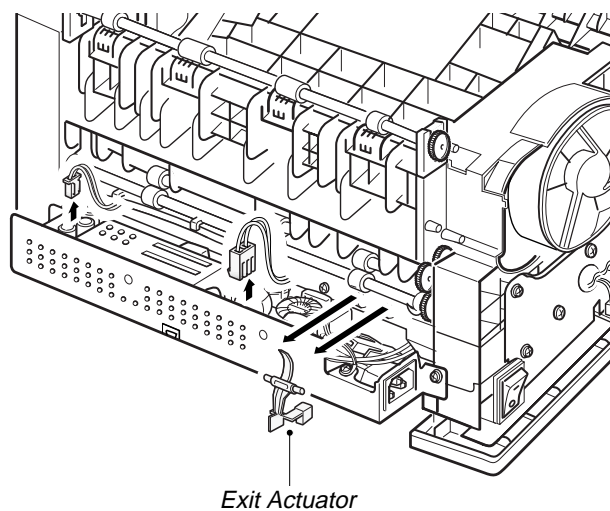
1. Before you remove the fuser, you should remove:

- Controller Board (see page 4-3)
- Main Cover (see page 4-7)
- MP Tray (see page 4-6)

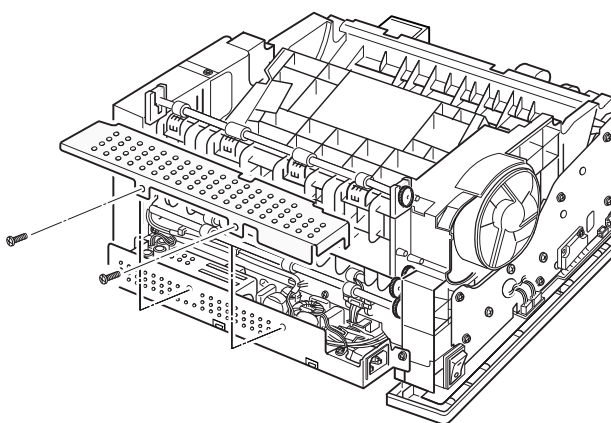
2. Remove three screws, and remove the bracket.



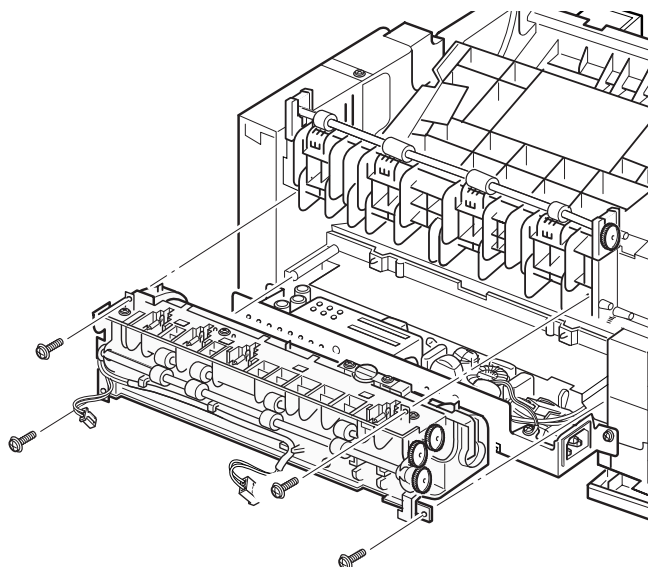
4. Remove the exit actuator. Unplug two connectors.



3. Remove two screws from the SMPS bracket.

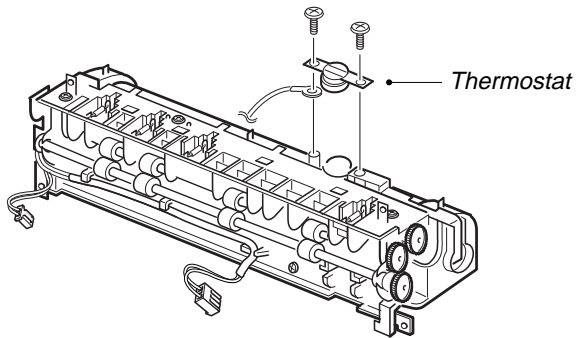


5. Remove four screws, and remove the fuser assembly.



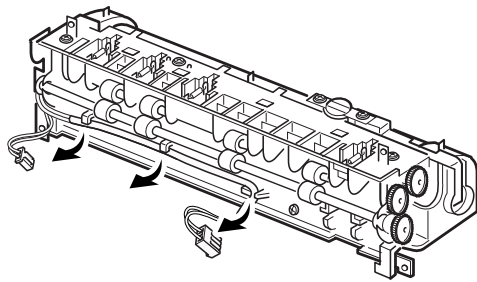
To remove the thermostat from the fuser assembly :

Remove two screws, and take the thermostat out.

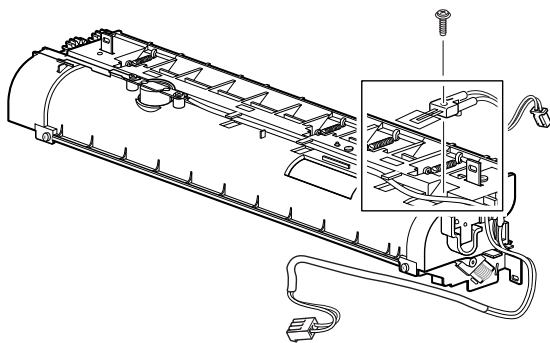


To remove the thermistor from the fuser assembly :

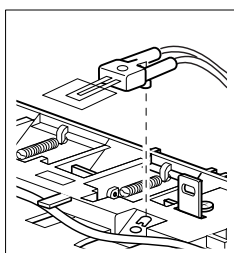
1. Release the wire from the three holders.



2. Remove one screw, then take the thermistor out.

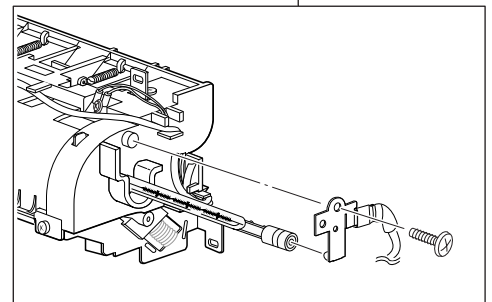
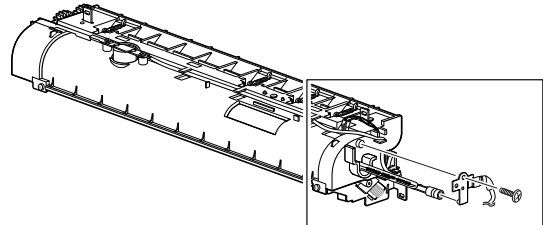


Note: When you reassemble the thermistor, make sure that it puts in place.

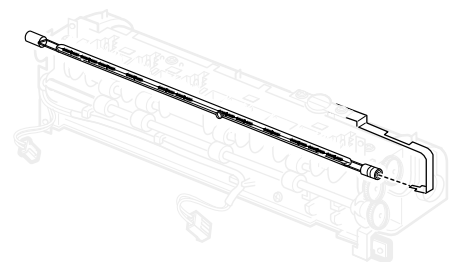


To remove the halogen lamp from the fuser assembly :

Remove one screw.



Note: When you reassemble the halogen lamp, make sure that it is inserted into the slot properly.

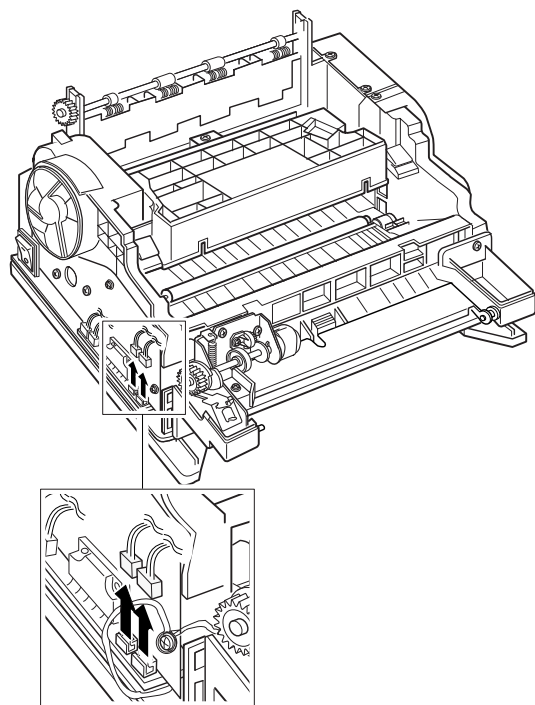


4-13 MPF Assembly and Miscellaneous on MPF Assembly

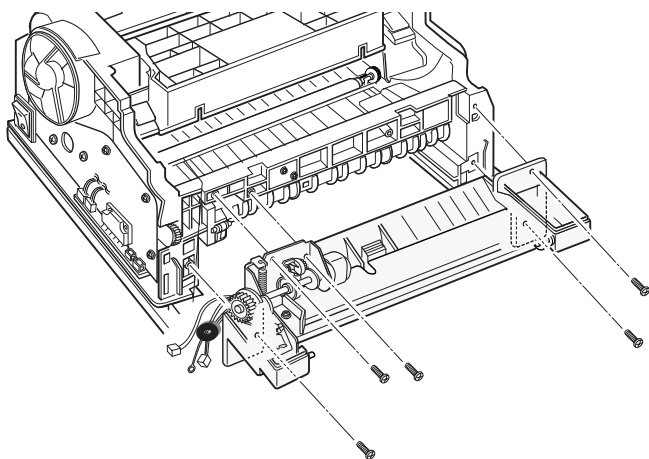
1. Before you remove the MPF assembly, you should remove:

- Controller Board (see page 4-3)
- Main Cover (see page 4-7)
- MP Tray (see page 4-6)

2. Unplug two connectors from the drive board.

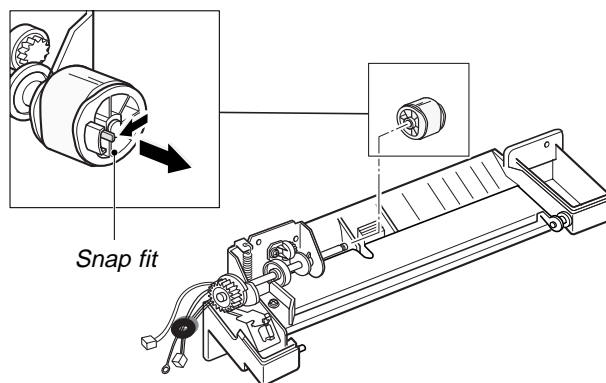


3. Remove five screws, then remove the MPF assembly.



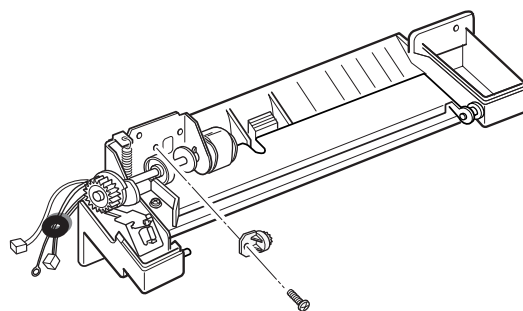
4. To replace the pickup roller on the MPF assembly:

Squeeze the snap fit on the roller and remove the roller.



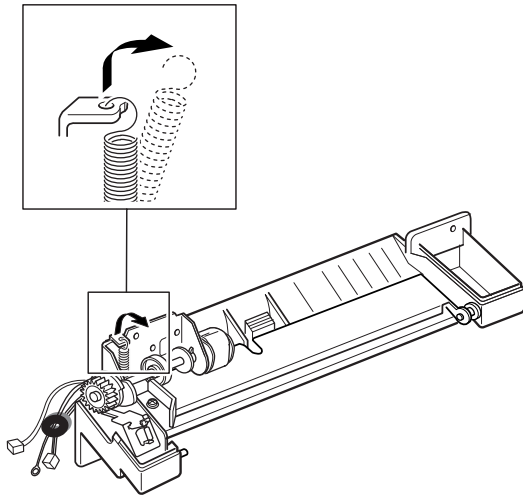
To replace the damper gear on the MPF assembly :

- 1) Remove one screw, then remove the damp gear.

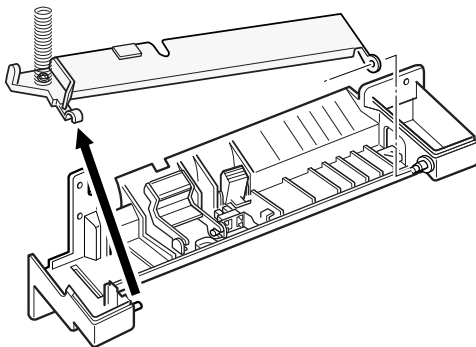


To replace the solenoid on the MPF assembly :

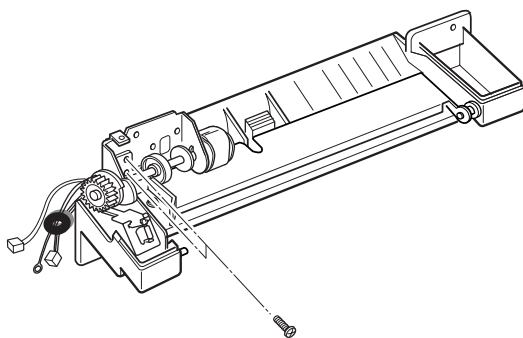
1) Remove the spring.



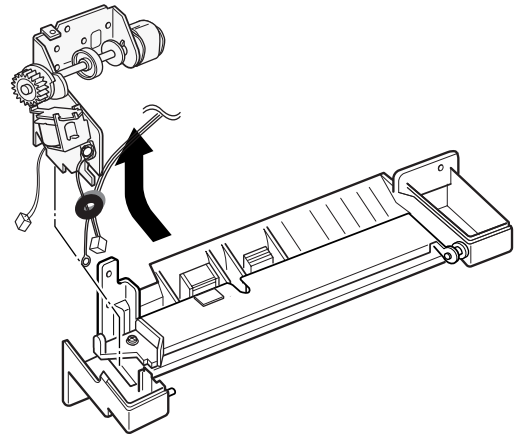
2) Rotate the right end of the knockup plate until it is released, then take it out.



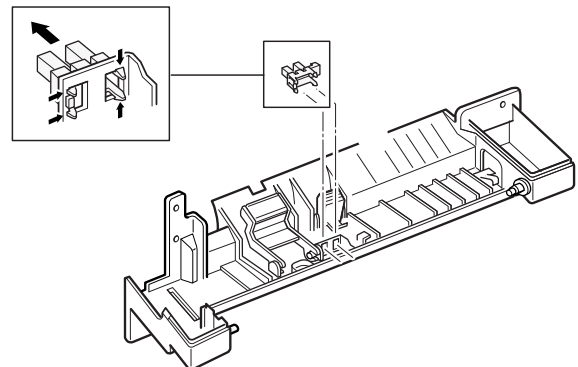
3) Remove two screws.



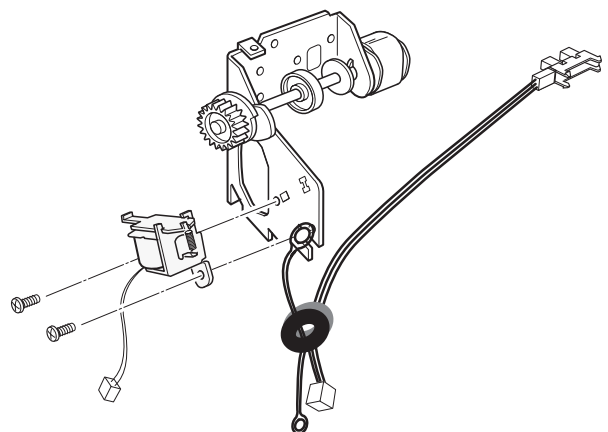
4) Pull the MPF bracket out in the direction of arrow.



5) Unlatch the PE sensor, then take it out.



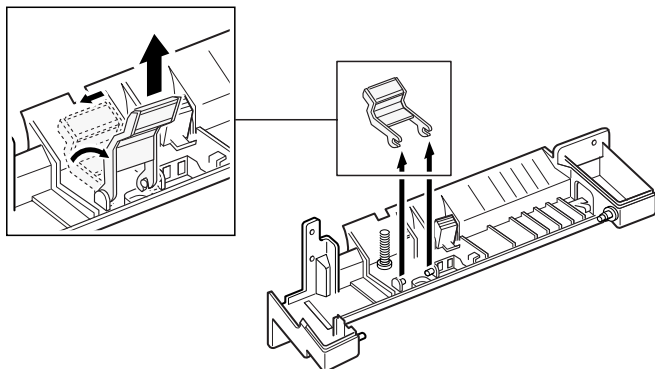
6) Remove two screws from the MP bracket, then remove the solenoid.



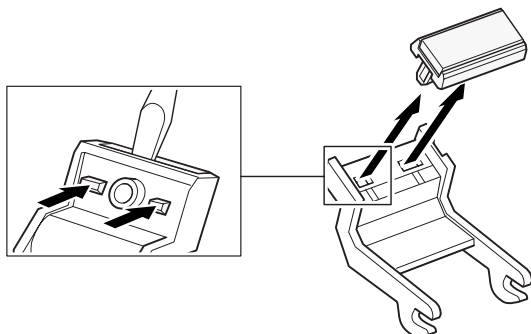
To replace the pickup holder on the MPF assembly :

1) Before you remove the pickup holder, you should remove the MP bracket (see page xx) and PE sensor (see page xx) on the MPF assembly.

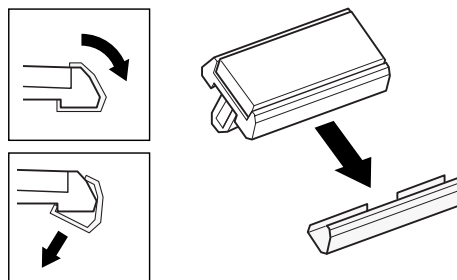
2) Pull the pickup holder to the left and rotate it until the both ends of the holder are properly released, then pull it up.



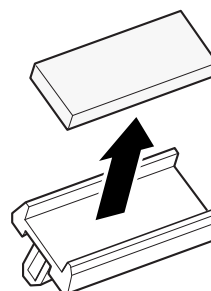
3) Remove the pickup pad using a proper tool.



4) Remove the pickup guide.



5) Remove the holder pad.



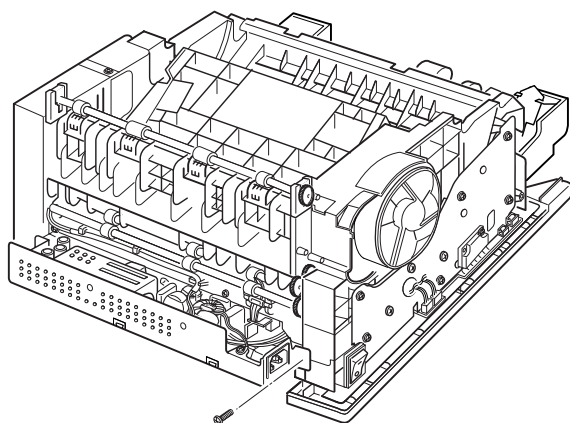
4-14 Engine Board and Miscellaneous

1. Before you remove the engine board, you should remove:

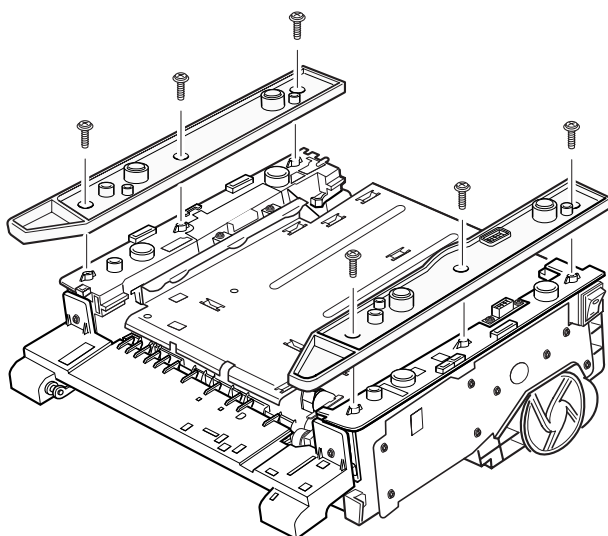
- Controller Board (see page 4-3)
- Main Cover (see page 4-7)
- MP Tray (see page 4-6)

2. Remove the SMPS bracket as described in '4-10 Fuser' and unplug four connectors.

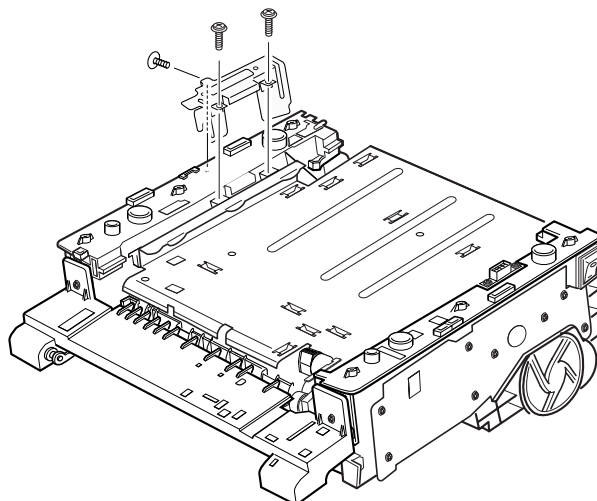
3. Remove one screw from the engine board.



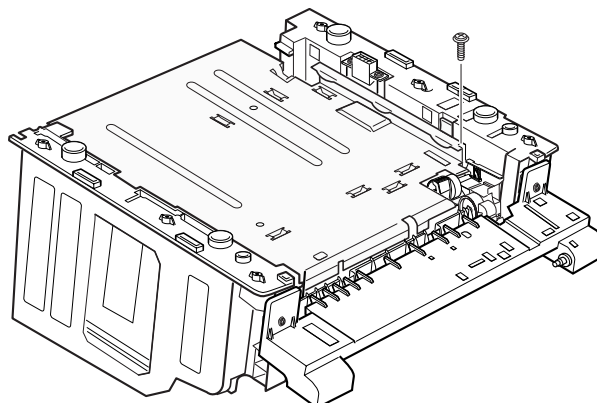
4. Turn the printer over. Remove six screws from the left and the right base brackets, and take them out.



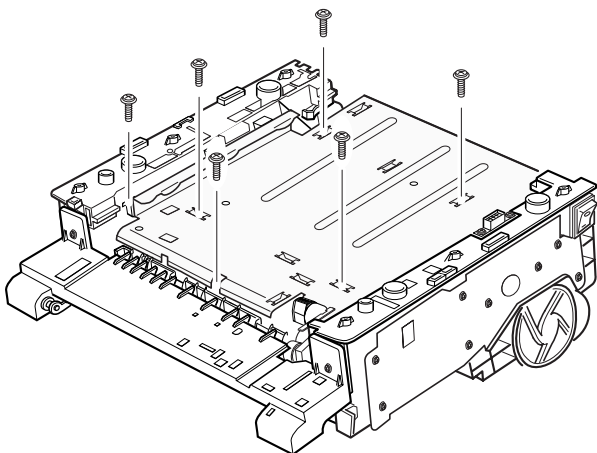
5. Remove three screws securing the ICU ground, and remove the ICU ground.



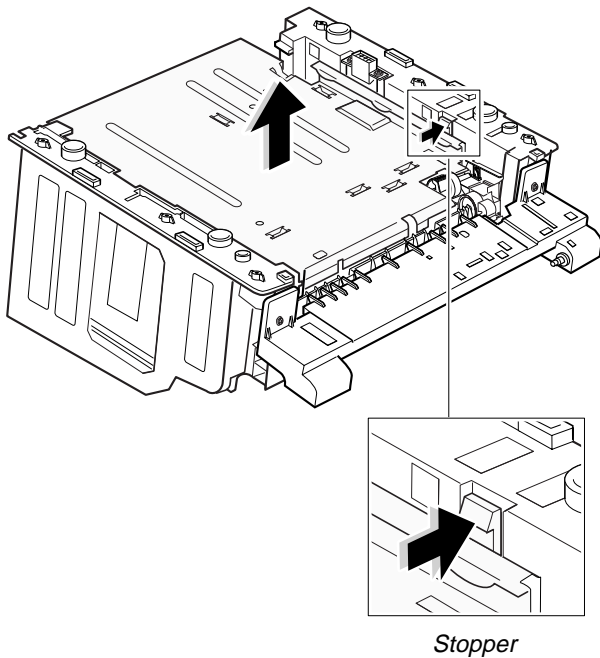
6. Remove one ground screw.



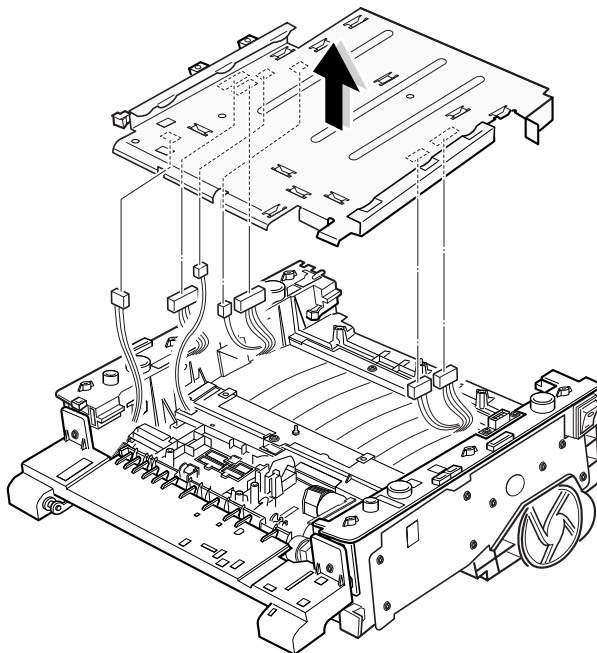
7. Remove six screws securing the PCU shield.



8. While you push the stopper to release the PCU shield, take the PCU shield out of the printer.

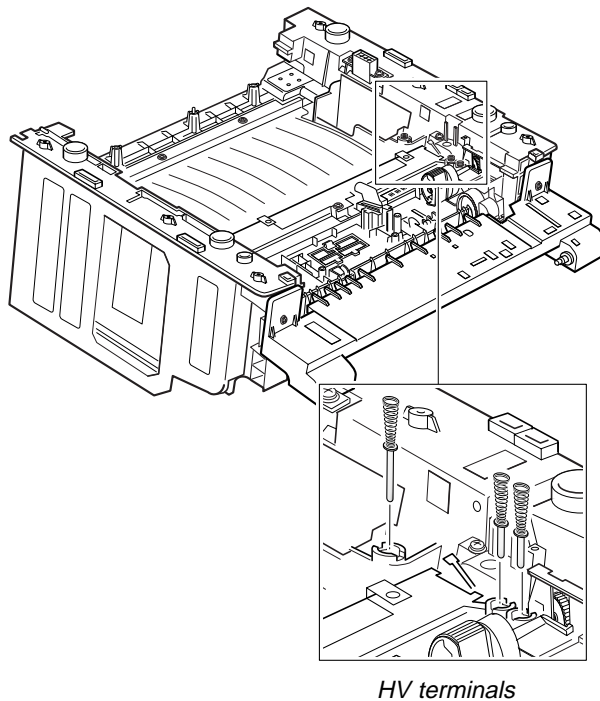


9. Unplug all connectors from the PCU shield, and remove the shield.



To replace HV terminals :

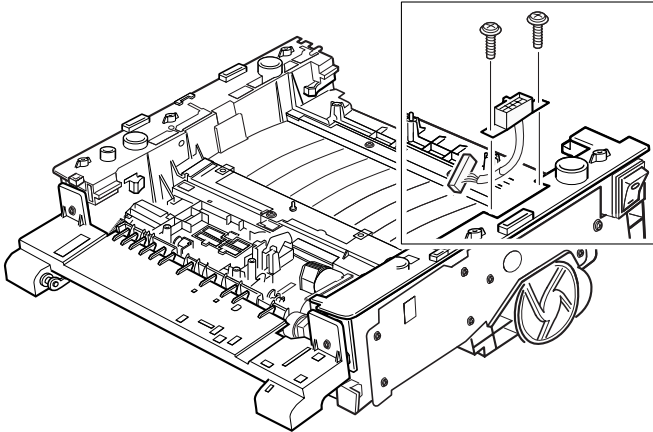
Remove the terminals.



Note: When you replace with new ones, be careful that they are inserted in place.

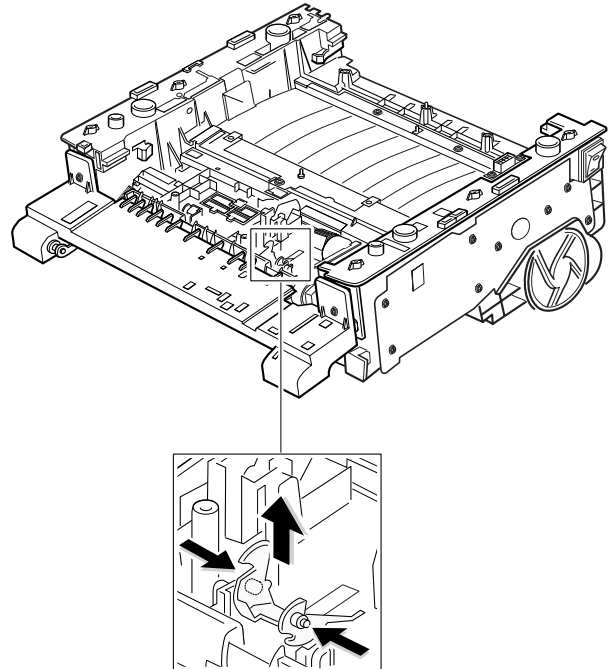
To replace the SCF connector :

Remove two screws and take it out.



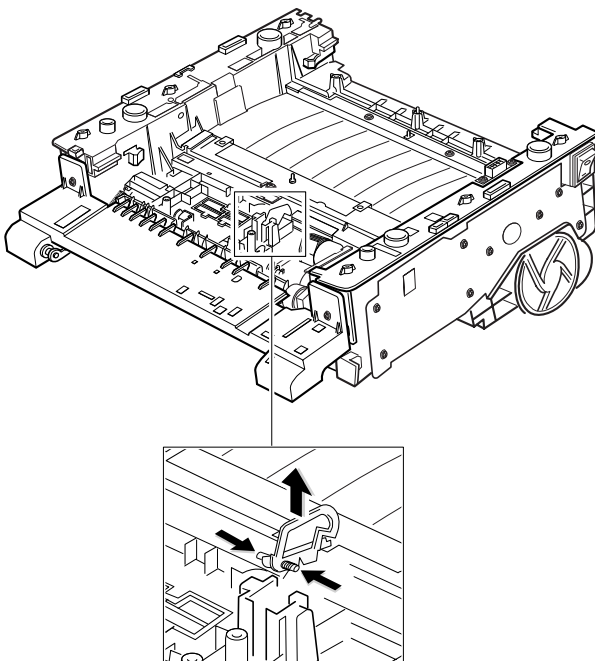
To replace the pickup sensor :

Take the sensor out while you push the both ends of the sensor.



To replace the paper empty sensor :

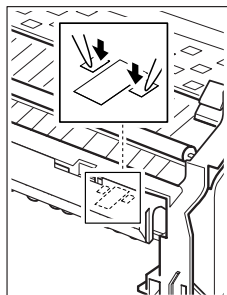
Take the sensor out while you push the both ends of the sensor inward.



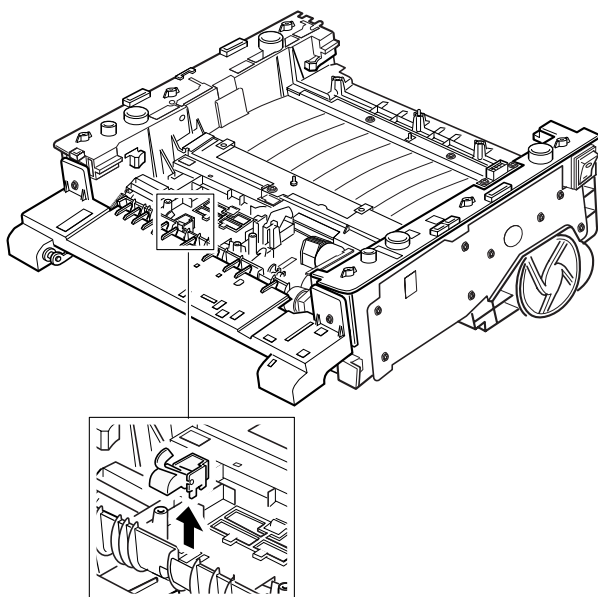
*Paper empty
sennsor*

To replace the actuator :

1. Turn the mechanism back and push down the points as shown to unlatch the actuator.

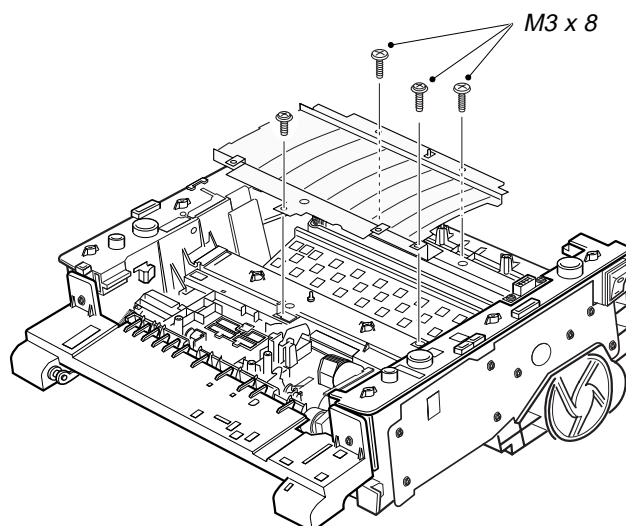


2. Turn the unit over, and remove the actuator.



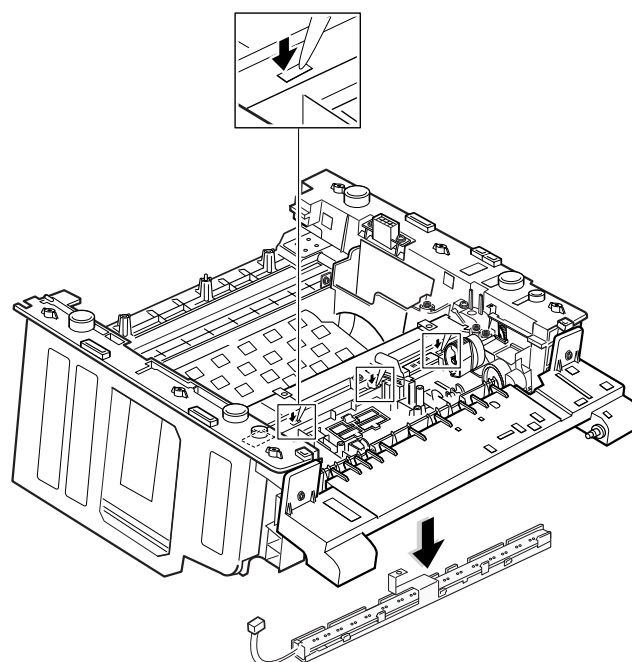
To remove the transfer guide :

Remove four screws and take the guide out.



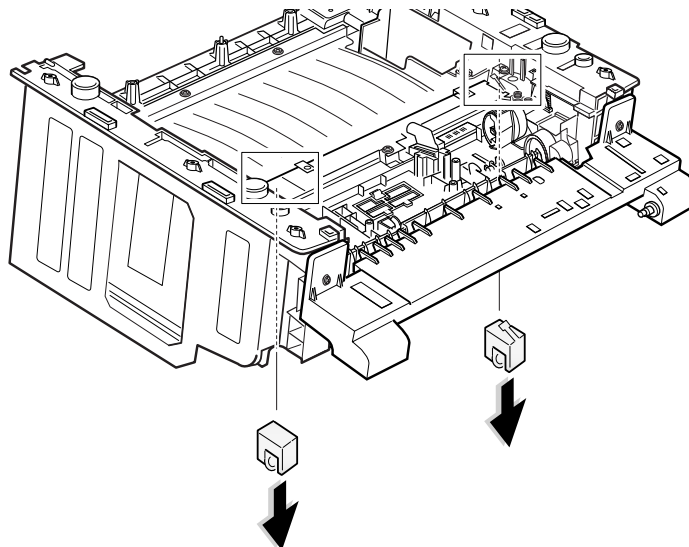
To replace the PTL module :

Release the three tabs latching the sensor using a phillips screwdriver, then push the sensor down.

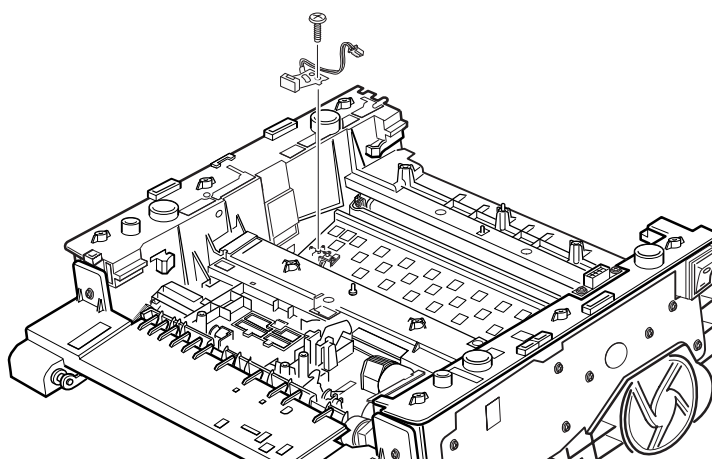


To replace the transfer roller bushings (left and right) :

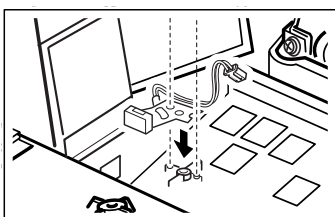
Release each tab latching the left and right holder, then push the holder down.

**To replace the thermistor assembly :**

Remove one screw, and remove the thermistor assembly.



Note: When you reassemble the thermistor assembly, make sure that it puts in place.

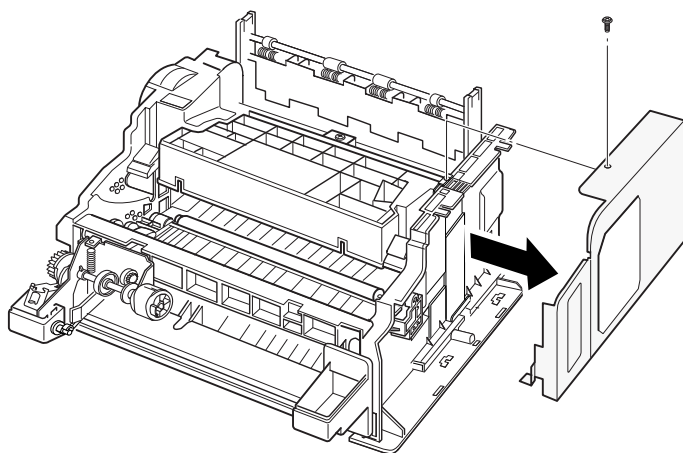


4-15 Cover Open Sensor

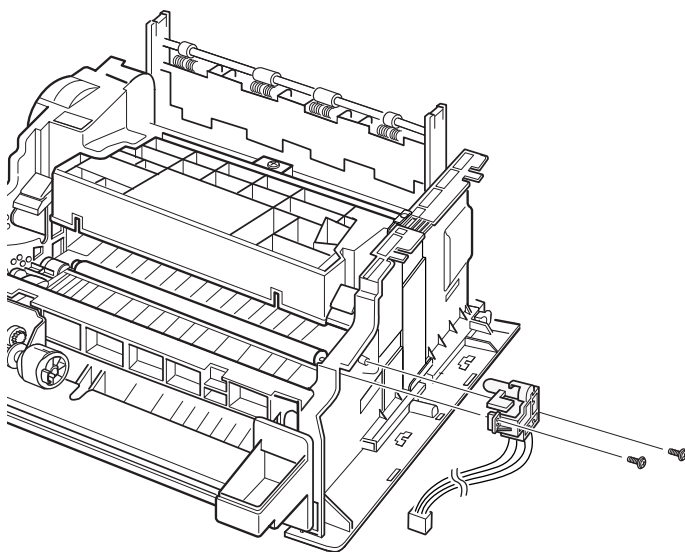
1. Before you remove the sensor, you should remove:

- Controller Board (see page 4-3)
- Main Cover (see page 4-7)
- MP Tray (see page 4-6)
- Engine Board (see page 4-17)

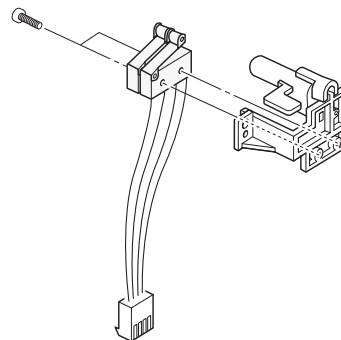
2. Remove one screw, then remove the ICU shield.



3. Remove two screws securing the sensor to the main frame.

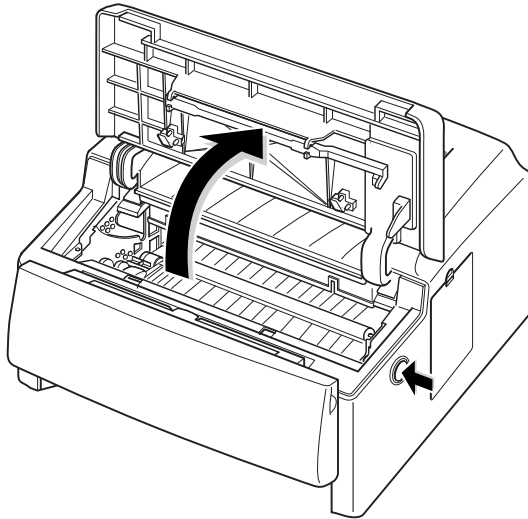


4. Remove two screws, then remove the sensor.

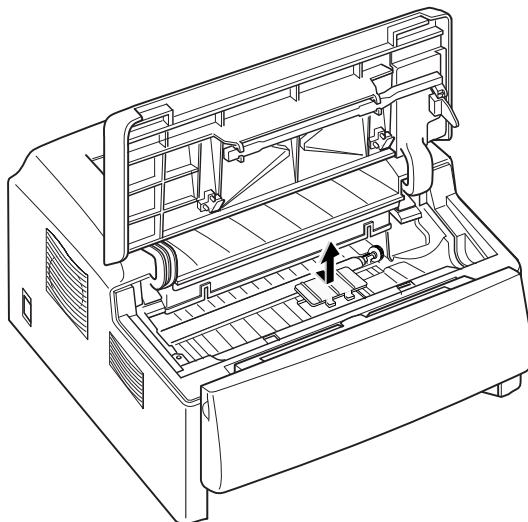


4-16 ROM

1. Press the cover open switch and raise the printer cover.

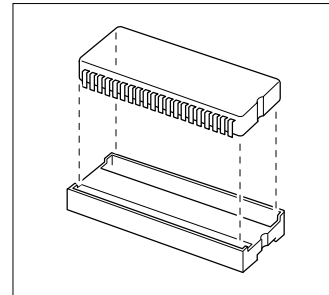


2. Remove the ROM cover.



3. Replace ROM using the specified jig.

Note: When you install a new ROM, be careful for the direction.



Memo

5. Troubleshooting

Error code 1-010

Fault	Black vertical stripes	Model	ML-6100
Description Black vertical stripes occur in the printing.			
Check <ol style="list-style-type: none">1. Developer cartridge2. Transfer roller3. Charge roller			
Cause <ol style="list-style-type: none">1. Defective develop roller or bad blade of toner cartridge.2. Defective transfer roller or charge roller.			
Solution <ol style="list-style-type: none">1. Replace the toner cartridge, if defective.2. Replace the roller defective.			
Remark			
Others			

Error code 1-020

Fault	White vertical stripes	Model	ML-6100
Description White vertical voids in the image.			
Check <ol style="list-style-type: none"> 1. LSU 2. Developer cartridge 3. Fuser 			
Cause <ol style="list-style-type: none"> 1. Foreign matter stuck onto the window of internal lens of LSU mirror 2. Foreign matter or toner particles between the developer roller and blade 3. If the fuser is defective, voids occur periodically at the top of a black image. 			
Solution <ol style="list-style-type: none"> 1. Clean the LSU window with a recommended cleaner, or replace the LSU window. 2. Replace the developer cartridge if defective. 3. Open rear cover and check ribs in the fuser for contamination. Clean if necessary. 			
Remark Use LSU cleaner dated after January 1997.			
Others If white streaks occurs fewer than 5 or 6 times, it can be considered as normal.			

Error code 1-030

Fault	Black horizontal stripes	Model	ML-6100
Description Dark or blurry horizontal stripes occur in the printing periodically.			
Check Developer cartridge			
Cause 1. Bad contacts of the voltage terminals to developer 2. The rollers may be stained with toner particles. * Abnormal image periodicity : 37.7 mm = Charge roller 31.3 mm = Supply roller 94.2 mm = OPC drum 46 mm = Develop roller non periodical = Blade			
Solution 1. Check all voltages, and adjust as necessary. 2. Check for terminal contacts, and replace the cartridge, if necessary.			
Remark			
Others			

Error code 1-040

Fault	Black or white spots	Model	ML-6100
<p>Description</p> <p>Dark or blurry black or white spots occur periodically.</p>			
<p>Check</p> <ol style="list-style-type: none"> 1. Developer cartridge 2. Transfer voltage 3. Transfer roller's life 			
<p>Cause</p> <ol style="list-style-type: none"> 1. If dark or blurry black spots occur periodically, the rollers in the Developer may be contaminated with foreign matter or paper particles. (Charge roller : 37 mm interval, OPC drum : 94 mm interval). 2. If faded areas or voids occur in a black image at intervals of 94 mm, or black spots occur elsewhere, the OPC drum surface is damaged. 3. If a black image is partially broken, the transfer voltage is abnormal or the transfer roller's life has expired. 			
<p>Solution</p> <ol style="list-style-type: none"> 1. Run OPC cleaning to remove excess toner and paper particles on the charge roller and OPC drum. Repeat 2 or 3 times. Run the self-test. If the same problem persists, replace the developer. 2. Clean the rollers. If problem persists, replace the Developer. 3. The transfer roller guarantees 50,000 sheets printing. If the roller's life is expired, replace it. 			
<p>Remark</p>			
<p>Others</p>			

Error code 1-050

Fault	Light image (1)	Model	ML-6100
Description The printed image is light, with no ghost.			
Check Developer cartridge			
Cause <ol style="list-style-type: none"> 1. The life of cartridge is ended. 2. Ambient temperature is below than 10 °C. 3. Agitator gear in the Developer is defective. 4. Bad contact of supply roller and abnormal supply voltage. 			
Solution <ol style="list-style-type: none"> 1. Check the weight of the developer cartridge, and replace if necessary. When the cartridge is almost used up, the weight will be as follows: ML+6000D5 : 960 grams +/- 20 grams 2. In low temperature, wait 30 minutes after printer is powered on before you start printing. 3. Check if the hopper gear is visible from the side of the developer. If not, replace the developer. 4. Check for the supply roller contact and the supply voltage. 			
Remark			
Others			

Error code 1-051

Fault	Light image (2)	Model	ML-6100
Description The printed image is light, with no ghost.			
Check Engine board			
Cause <ol style="list-style-type: none"> 1. Charge voltage (=MHV) on the engine board exceeds 1520V. (Perform DCU diagnostic mode 01 to measure the voltage). 2. No power to the supply roller. 			
Solution Check the following parts and replace if defective : U201(KA324), Q211(C1008), T202(Transformer), resistors, and diodes in the output and feedback area.			
Remark Check the charge voltage (MHV) at : U201; while operating, #10/#9 2.5~2.9V, #8 5.5~8.5V while idling, #9 2.7V, #10/#8 0V Q201 operating voltage; Base 2~2.5V, Emitter 0~1V, Collector 30~60V U203; #1 0V input, #2 0V output			
Others			

Error code 1-052

Fault	Light image (3)	Model	ML-6100
Description The printed image is light, with no ghost.			
Check 1. Engine board 2. Main body			
Cause 1. Engine board bias (350-485V) and supply voltage (570-630V) may be low (Perform DCU diagnostic mode 04 to measure the voltage). 2. Direct strong light may be entered into the manual feed slot.			
Solution 1. Check the following parts : U201(KA324), Q204(D526-Y), T204(Transformer), U203(SN7407N), resistors, diodes in the output and feedback area. 2. Check if contrast mode is set to 'Light'. If not, change the install position of the printer or attach OPC cover sheet (P/No: JC72-49093A).			
Remark Bias and supply voltage check point: U203; #9 pulse input, #8 pulse output			
Others			

Error code 1-060

Fault	Dark image (1)	Model	ML-6100
Description The printed image is dark.			
Check Engine board			
Cause 1. No charge voltage in the engine board. (Perform DCU diagnostic code '01' to measure the voltage).			
Solution 1-1. Check the following parts : U201(KA324), Q211(C1008), Q201(D526-Y), T202, U203 (SN7407N), resistors, diodes in the output and feedback area. 1-2. Clean the high voltage terminal on the engine and its PBA. 1-3. Refer to the following information. U201(KA324)'s pin #12, #13 ; 2.5~2.9 V, pin #14 ; 5.5~8.5 V For standby, pin #13 ; 2.7V, pin #12 & #14 ; 0V Q201's operating voltage ; base=+2~2.5 V, emitter=0~1 V collector=30~60 V U203(7407N)'s pin #1 ; 0V input, pin #2 ; 0V output			
Remark			
Others			

Error code 1-061

Fault	Dark image (2)	Model	ML-6100
Description The printed image is dark.			
Check Engine board			
Cause 1. No supply or bias voltage at the engine board (Perform DCU diagnostic code '04' to measure the voltage).			
Solution 1-1. Check the following parts : U201(KA324), Q204(D526-Y), T204, U203 (SN7407N), resistors, diodes in the output and feedback area. 1-2. Refer to the following information. U203(7407N)'s pin #1; pulse input, pin #2; pulse output.			
Remark			
Others			

Error code 1-062

Fault	Dark image (3)	Model	ML-6100
Description The printed image is dark.			
Check Engine board			
Cause 1. Voltage higher than normal. (normal supply voltage : 570-630V, normal bias voltage : 350-485V).			
Solution 1-1. Check the following parts : U201(KA324), Q204(D526-Y), T204, U203 (SN7407N) resistors, diodes in the output and feedback area. 1-2. Refer to the following information. U203(7407N)'s pin #9; pulse input, pin #8; pulse output. 1-3. Check developer contacts for contamination by toner particles.			
Remark			
Others			

Error code 1-070

Fault	Uneven density	Model	ML-6100
Description Print density is uneven between left and right.			
Check <ol style="list-style-type: none"> 1. Transfer roller pressure 2. Developer cartridge 			
Cause <ol style="list-style-type: none"> 1. The pressure force on the left and right springs of the transfer roller is not even (left : 450 gf, right : 600 gf), the springs are damaged, the transfer roller is improperly installed, or the transfer roller bushing or holder is damaged. 2. The toner level is not even on the developer roller due to the bad blade. 			
Solution <ol style="list-style-type: none"> 1. Replace defective holder or springs. Adjust the transfer voltage. 2. Replace the developer cartridge. 			
Remark			
Others			

Error code 1-080

Fault	Background	Model	ML-6100
Description Background appears in the printing.			
Check <ol style="list-style-type: none"> 1. Engine board 2. Developer cartridge 3. Transfer roller 4. Operating environment 			
Cause <ol style="list-style-type: none"> 1-1. Low transfer voltage (10% below than normal) 1-2. High supply and / or bias voltage. 1-3. No transfer voltage. 2. Unauthorized recording paper has been used. 3. Abnormal ambient temperature or humidity. 4. Defective develop roller. 			
Solution <ol style="list-style-type: none"> 1-1. Refer to Error Code 1-060. 1-2. Refer to Error Code 1-061. 1-3. Refer to Error Codes 1-090 and 1-091. 2. Use a recommended type of recording paper. 3. If the printer is under abnormal ambient condition for a long time, print errors may occur. Improve the operating environment. 4. Replace the toner cartridge. 			
Remark			
Others			

Error code 1-090

Fault	Ghost (1)	Model	ML-6100
Description Ghost occurs at 94 mm intervals.			
Check <ol style="list-style-type: none"> 1. Developer cartridge 2. Main body 			
Cause <ol style="list-style-type: none"> 1. Contamination of high voltage terminals in the main body , engine board, and / or developer. 2. Transfer roller lifetime has expired. 3. No using recommended recording paper. 4. The Pre-Transfer Lamp (Refer to ⑱ on page 6-6.) 			
Solution <ol style="list-style-type: none"> 1. Open top cover and disassemble the unit and clean contamination components. 2. After replacing the transfer roller, make sure the transfer voltage is normal. 3. Use a recommended type of recording paper. 4. Check for the PTL operation, and if required, check for the main board. 			
Remark			
Others			

Error code 1-090-1

Fault	Ghost (2)	Model	ML-6100
Description Ghost occurs at 94 mm intervals.			
Check Operating environment			
Cause 1. Abnormal low temperature and humidity. In this case, ghost occurs on the entire page and the print density is too light.			
Solution 1. If the operating temperature and relative humidity are too low, try waiting about 1 hour after power on before using printer.			
Remark			
Others			

Error code 1-091

Fault	Ghost (3)	Model	ML6100
Description When xerographic paper is used in ADF, ghost occurs at 94 mm intervals.			
Check Engine board			
Cause 1. No minus (-) transfer voltage output from the engine board. (Normal voltage : 1250 -1450V with 660 Mohm load) 2. The (+) transfer voltage may be abnormal when performing DCU #13 with 660 Mohm load on the transfer voltage output. (Normal voltage: 2200V (+30/-30V) DCU #14, 3250-3350V DCU #13).			
Solution Check the following parts : U201(KA324), Q207(A708), Q202(KSD526-Y), T201, U203 (SN7407), resistors, or diodes in the output and feedback area.			
Remark			
Others In case of no minus transfer output voltage, image quality may be poor, and background may occur in the printing.			

Error code 1-093

Fault	Ghost (4)	Model	ML-6100
Description When printing on card stock or transparencies using manual feeder, ghost occurs at 94 mm intervals.			
Check <ol style="list-style-type: none"> 1. Selected paper type in the software application 2. Engine board 			
Cause <ol style="list-style-type: none"> 1. When printing on card stock or transparencies, higher transfer voltage is required. Select 'Thick Mode' on paper type menu from the software application. 2. Defective transfer voltage terminal in the engine board. 			
Solution <ol style="list-style-type: none"> 1. Select 'Thick Mode' on paper type menu from software application to print on card stock or transparencies. 2. If the transfer voltage in the engine board is out of specification, refer to Error Code 1-091 			
Remark			
Others			

Error code 1-094

Fault	Ghost (5)	Model	ML-6100
Description Dark ghost occurs in printing at 69 mm intervals			
Check Fuser			
Cause The heat roller and pressure roller in the fuser are contaminated with toner or paper particles.			
Solution Open the rear cover and check if the heat roller is stained. If stained, disassemble the fuser and clean the rollers with soft cloth dampened with alcohol. If ghost still occurs, replace the fuser.			
Remark			
Others			

Error code 1-095

Fault	Ghost (6)	Model	ML-6100
Description White ghost occurs in the black image printing at 46 mm intervals.			
Check 1. Developer cartridge			
Cause 1. The life of the developer may be expired. 2. Abnormal transfer voltage or bad contact of the transfer roller			
Solution 1. Measure the weight of the developer and replace if the weight is less than 960g +/-20g. 2. Check the supply voltage and adjust if necessary. Check for the contact.			
Remark			
Others			

Error code 1-100

Fault	Partial blank image	Model	ML-6100
Description Partially blank image appears either periodically or non-periodically.			
Check 1. Transfer roller 2. Developer cartridge			
Cause 1. The pressure force on the left and right transfer roller springs are not even, the springs are damaged, the transfer roller is improperly installed, or the transfer roller bushing or holder is damaged. 2. If a black image prints light or gradually light at intervals of 49 mm, the transfer roller is defective. 3. If there is a partial blank image on left and right side of the page: 1) The life of the transfer roller has expired. 2) Abnormal transfer voltage. 3) The life of the developer has expired.			
Solution 1. Replace the defective components. 2. Replace the transfer roller. 3-1. Replace the transfer roller. 3-2. Measure the transfer voltage. If the voltage is abnormal, disassemble the main board and clean the components stained with toner or paper particles. 3-3. Measure the weight of the developer. If the weight is less than 960 g \pm 20 g, replace the developer.			
Remark			
Others			

Error code 1-110

Fault	Stains on the face of page	Model	ML-6100
Description Background too dark on the face of printed page			
Check <ol style="list-style-type: none"> 1. Developer cartridge 2. Main body 			
Cause <ol style="list-style-type: none"> 1. Toner leakage due to improperly sealed developer. 2. Transfer roller length is out of spec. (218 mm) or the roller is defective. 3. The inside of the unit is contaminated with toner or paper particles. 			
Solution <ol style="list-style-type: none"> 1. Clean the unit thoroughly. If problems still occurs, replace the developer. 2. If the roller is shorter than the recording paper or the roller is severely stained, replace the roller. 3. Clean the contaminated components. 			
Remark			
Others			

Error code 1-111

Fault	Stains on back of page	Model	ML-6100
Description The back of the page is stained at 49 mm intervals			
Check Transfer roller			
Cause <ol style="list-style-type: none"> 1. Transfer roller is contaminated. 2. Abnormal (+) (-) transfer voltage, or cleaning voltage. 3. Defective transfer roller 			
Solution <ol style="list-style-type: none"> 1. Clean the transfer roller thoroughly. Replace if contaminated severely. 2. Adjust the voltages. 3. Replace if necessary. 			
Remark			
Others			

Error code 1-120

Fault	Blank page printout	Model	ML-6100
Description Blank page is printed.			
Check <ol style="list-style-type: none"> 1. Bad ground contacts in OPC and/ or developer. 2. Seal tape on the cartridge 			
Cause <ol style="list-style-type: none"> 1. GND OPC is not well grounded. 2. Seal tape is not removed. 3. Low toner 			
Solution <ol style="list-style-type: none"> 1. Repair or replace the GND terminal. 2. Remove the seal tape. 3. Shake the toner cartridge and print. Or replace with new one. 			
Remark			
Others			

Error code 1-121

Fault	Partial black image	Model	ML-6100
Description One or several blank pages are printed. When the printer turns on, several blank pages print.			
Check Control board			
Cause Defective control board			
Solution <ol style="list-style-type: none"> 1. Perform the engine self test using DCU. If blank page prints, the control board is defective. If the printer works normally, refer to next solution (2). If the control board is defective, check the connection on the control board, QP1700 pin 125, and 202. 2. If blank page is printed one time or continuously, check that the video controller oscillates properly at 47.7789 MHz. (lower than 0.75V, higher than 3.5V) 3. If blank pages prints continuously when the printer turns on, check the CPU works properly, and replace if defective. 			
Remark			
Others			

Error code 1-130

Fault	Data error	Model	ML-6100
Description Incomplete or missing characters.			
Check Control board			
Cause <ol style="list-style-type: none"> 1. Bad connections of port 2. Defective oscillators in the video controller. 3. Defective CPU in the video controller. 			
Solution <ol style="list-style-type: none"> 1. Check that the port and related parts are properly connected or soldered. 2. Check the oscillators (47.7789 MHz, 50MHz) on the video controller. 3. Replace the CPU on the video controller. 			
Remark			
Others			

Error code 1-140

Fault	Poor fusing grade (1)	Model	ML-6100
Description When printing on xerographic paper from cassette, the printed image is diffused.			
Check Engine board			
Cause Defective the fuser (Heat lamp) control circuit in the engine board.			
Solution Refer to solution 2-1 under Error Code 3-011.			
Remark			
Others			

Error code 1-141

Fault	Poor fusing grade (2)	Model	ML6100
Description When printing on card stock or transparencies using manual feeder, the printed image is diffused.			
Check 1. Improper paper type menu setup 2. Engine board			
Cause 1. When printing on card stock or transparencies, higher transfer voltage is required. 2. Defective transfer voltage circuit in the engine board.			
Solution 1-1. Select 'Thick Mode' on paper type menu from the software application to print on card stock or transparencies. 1-2. Check the fuser control circuit. Refer to Solution 2-1 under Error Code 3-011. 2. Check the transfer voltage and adjust if necessary.			
Remark			
Others			

Error code 2-010

Fault	Wrong print position	Model	ML-6100
Description Printing begins at wrong position on the paper.			
Check Feed sensor actuator, LSU, Pick-up ass'y, Bracket-dust, Solenoid, Video Controller.			
Cause <ol style="list-style-type: none"> 1. Wrong sense time caused by defective feed sensor actuator. 2. Skew: <ul style="list-style-type: none"> Bad LSU-assembling Uneven pressure force of the pick-up ass'y Defective mechanical parts 3. Top margin; <ul style="list-style-type: none"> Early feeding by the solenoid Wrong OP1 sensor position Wrong video controller connection 			
Solution <ol style="list-style-type: none"> 1. Replace the defective actuator. 2. Reassemble or replace the LSU. <ul style="list-style-type: none"> Reassemble or replace the pick-up ass'y. Reassemble or replace the defective mechanical parts. (for example, Bracket-dust). 3. Replace the solenoid. <ul style="list-style-type: none"> Check OP1. Check the Video Controller or its connection. 			
Remark			
Others			

Error code 2-020

Fault	Jam 0	Model	ML-6100
Description <ol style="list-style-type: none"> Paper is not exited from the cassette. Paper is stopped just after cassette, before feed sensor, or on the feed sensor. 			
Check Engine board			
Cause <ol style="list-style-type: none"> Open the printer cover, and close it. Then check : <ol style="list-style-type: none"> If the paper does not feed into the printer, the feed clutch driving circuit in the engine board may be defective. If the paper feeds into the printer and 'Jam 0' occurs, the feed sensor OP1 on the engine board may be defective. Defective PLT-Knockup (12) (Refer to ⑨ on page 6-14.) 			
Solution <ol style="list-style-type: none"> Check for the solenoid driving circuit using DCU diagnostic mode 06. <ol style="list-style-type: none"> Check for 24V input on D1 cathode. If 24V is not present, check Q4. If they work normally, check for 24V output from SMPS. Measure the feed clutch resistance. Replace if not approximately 60 ohms. Check Q4. if Q4 is OK, the collector and base should be 0V and 0.7V DC to GND, respectively. Check for Feed sensor OP1 and related parts. <ol style="list-style-type: none"> Replace Feed sensor actuator if defective. When OP1 sensor is blocked, U6 (74HC245) pin#16 should be over 3.5V. When the sensor is not blocked, the pin should be below 0.7V. One side of R15 in OP1 transmitter should be 5V, and the other end 1.2V. If normal, check OP1 receiver. If not shorted, replace CPU. Replace the cassette, if damaged. 			
Remark			
Others			

Error code 2-030

Fault	Jam 1	Model	ML-6100
Description Recording paper is jammed in the output area (inside the fuser), or multiple sheets of the paper are fed at once.			
Check Engine board			
Cause 1. Open the printer cover, and close it. Then check : - If the paper does not feed into the printer, the feed clutch driving circuit in the engine board may be defective. - If the paper feeds into the printer and 'Jam 1' occurs, the feed sensor OP1 on the engine board may be defective. - If paper is stopped in just front of fuser: 1-1. Feed sensor OP1 or feed actuator may be defective. 1-2. Exit sensor OP3 or exit actuator may be defective. 2. In case of multi-feeding, refer to Error Code 2-050.			
Solution 1-1. Check the feed sensor OP1. Refer to Error Code 2-020. Replace the feed actuator if defective. 1-2. Check OP contacts. In operating mode, U6 (74HC245) pin#13 should be below 0.7V. If not, check OP3 contact resistance. Replace OP3 if over 100 ohms. If the switch works normally, check R30. If defective, replace the exit sensor actuator. 2. In case of multi feeding, refer to Error Code 2-050.			
Remark			
Others			

Error code 2-040

Fault	Jam 2	Model	ML-6100
<p>Description</p> <p>Paper is completely fed out of the printer, but Jam 2 occurs. Or, the paper is stuck in the fuser roller.</p>			
<p>Check</p> <ol style="list-style-type: none"> 1. Engine board 2. Fuser 			
<p>Cause</p> <ol style="list-style-type: none"> 1. Check if paper is jammed in the pressure roller. 2. Open the printer cover, and close it : If Jam 2 occurs after the paper is completely fed out of the printer, the exit sensor contact may be bad or the exit sensor actuator may be deformed. 			
<p>Solution</p> <ol style="list-style-type: none"> 1-1. Check if the exit sensor actuator is defective, and replace if required. 1-2. Check the exit sensor OP3 contact and related parts. Refer to Error Code 2-030. 2. If the paper is stuck in the fuser, disassemble the fuser and remove the jammed paper, and clean the surface of the pressure roller with soft cloth, dampened with alcohol. 			
<p>Remark</p>			
<p>Others</p>			

Error code 2-050

Fault	Multi-feeding	Model	ML-6100
Description Multiple sheets of paper are fed at once.			
Check Engine board			
Cause 1. Solenoid malfunction. 2. Feed clutch armature does not engage the pick-up housing in the pick-up ass'y.			
Solution 1. If the solenoid does not work properly: 1-1. Measure the resistance of the feed clutch coil. If below 40 ohm (normal: 55-60 ohm), replace. 1-2. Check Q4 C/E short, and replace as necessary. (If C and E are shorted, multiple sheets of paper feed when the printer powers on.) 1-3. Check if the solenoid spring is returned to the original state. Replace if the return force is weak. 2. If the clutch works properly, but the armature does not engage the pick-up housing in the pick-up ass'y, bend the armature to pick up properly.			
Remark The feed clutch spring has 40 turns. A pad is attached to solenoid yoke, the armature angle is 90 degrees.			
Others			

Error code 3-010

Fault	Fuser Error	Model	ML-6100
Description All the lamps on the operator panel blink and the system stops.			
Check 1. Fuser 2. Engine board			
Cause 1-1. Thermostat, AC wire, or heat lamp may be open. 1-2. Thermistor may be open. (DCU error code 60, 62, 68.) 2-1. Abnormal heat lamp on/off 2-2. Malfunction of the overheat circuit			
Solution 1-1. Check thermostat, AC wire, and heat lamp. If the thermostat is open, check also R37, R47, or Q8. 1-2. If thermistor is open, check the wire. If the wire is good, check Q8. Q8 collector should be 0.2V, base 0.7V. 2-1. Check Q3 and its related parts in the order shown below. 1) Check Q3 C-E, B-E, B-C, and replace if shorted. If the voltage between B and E is below 0.7V, replace the transistor. 2) When lamp is on, if the base is 0V, check CPU pin 38. 3) When lamp is on, if the collector is 0V with lamp off, check PC151, Q101, and its related parts. 2-2. Check the overheat circuit. When U5 pin 7 is below 0.5V, the overheat circuit should activate and the lamp turns off. In normal mode, pin 6 is approximately 2.6V, pin 5 is over 2.6V, and pin 7 is over 4V. If not, check all related parts.			
Remark			
Others			

Error code 3-011

Fault	Malfunction of the gear motor in the fuser	Model	ML-6100
Description When printing, motor breaks away from its place due to the defective fuser gear.			
Check 1. Fuser 2. Engine board			
Cause 1. Fuser control temperature is set too high. 2. PC151 or Q3 is defective. 3. Overheat circuit is not operating properly.			
Solution 1-1. Check if the thermostat is open, and replace. 1-2. Check if the thermistor sensor is in place, and replace if required. 2-1. R57 and R58 = 3.3k and 1k, respectively. Check if R57 and R58 are 3.3K and 1K respectively. 2-2. Replace Q3 if C and E are short. 2-3. Replace PC151 if pin 4 and 6 are short. 2-4. Replace Q101 if T1 and T2 are short. 3. Check if the overheat circuit works properly : Refer to the solution 2-2 under 'Error Code 3-010'.			
Remark			
Others			

Error code 3-020

Fault	Scanner Error	Model	ML-6100
<p>Description</p> <p>The feeding paper is stopped in the front of transfer roller and all lamps on the operator panel blink.</p>			
<p>Check</p> <ol style="list-style-type: none"> 1. LSU 2. Engine board 			
<p>Cause</p> <ol style="list-style-type: none"> 1. Defective LSU 2. Defective Q5, or CPU 3. Abnormal resistance value of R8, R62 			
<p>Solution</p> <ol style="list-style-type: none"> 1. Perform DCU diagnostic code 05. If the DCU error code 95 is displayed, replace LSU. If you cannot solve the problem after you replace LSU, follow the steps below. <ol style="list-style-type: none"> (1) When you press ENTER key with DCU code '05', if the LSU motor does not run, check U205 pin 5, pin 6. If U205 pin 5, and pin 6 are normal, check CPU pin 40 and the related parts. If the motor drives properly, and CPU pin 25 is not below 0.5V, replace R51 and CPU. (2) When you press UP key with DCU code '05', if ON and OFF lamps do not turn on, check CPU pin 28 and 41, and their related parts. Normally pin 28 is over 3.5V when high, and below 0.7V when low. If the transformer works normally, replace CPU. 			
<p>Remark</p>			
<p>Others</p> <p>Q3, U3, CN3, SW151</p>			

Error code 3-030

Fault	Paper Empty	Model	ML-6100
Description <ul style="list-style-type: none"> • The PAPER lamp on the operator panel is on even when paper is loaded in the cassette. • The PAPER lamp on the operator panel does not come on when the paper cassette is empty. 			
Check <ol style="list-style-type: none"> 1. Actuator-Empty (Refer to ⑤2 on page 6-6.) 2. Engine board 			
Cause <ol style="list-style-type: none"> 1. Empty actuator may be defective. 2. Photo sensor OP2 on the engine board may be defective. 			
Solution <ol style="list-style-type: none"> 1. Replace the defective actuator. 2-1. U6 (74HC245) pin 15 should be over 3.5V when OP2 sensor is blocked, and below 0.7V when the sensor is not blocked. 2-2. One end of R24 in the transmitter of OP2 should be 5V, and the other end 1.2V. 2-3. If the related resistors are good, check for short circuit of OP2 receiver. If OP2 is normal, replace U6 (74HC245). 			
Remark			
Others			

Error code 3-040/3-041

Fault	Cover Open	Model	ML-6100
Description <ul style="list-style-type: none"> • The ERROR lamp is on even when the printer cover is closed. • The ERROR lamp does not come on even when the printer cover is open. 			
Check <ol style="list-style-type: none"> 1. Hook lever in the top cover (Refer to ② on page 6-4.) 2. Engine board 3. Actuator-cover open (Refer to ④⑧ ④⑨ on page 6-6.) 			
Cause <ol style="list-style-type: none"> 1. The hook lever may be defective. 2. Malfunction of the circuit containing the micro switch SW151 and its related parts on the engine board. 3. Defective actuator-cover open. 			
Solution <ol style="list-style-type: none"> 1. Replace the hook lever, if defective. 2. Check SW151 and its related parts : <ol style="list-style-type: none"> 2-1. Check SMPS 24V output. 2-2. Check D4 anode when SW151 is pressed. D4 anode will be below 3.5V when SW151 is open. Check for R38 and R39, and replace if defective. 2-3. If D4 anode is over 3.5V, check if CPU pin 48 is short. If not, replace CPU. 3. Replace the defective actuator. 			
Remark			
Others			

Error code 3-050

Fault	All Lamps Blinking	Model	ML-6100
Description When printer power is on, all lamps on the operator panel blink.			
Check 1. Harness between the engine and control boards 2. Engine board			
Cause Defective interface between the engine board and control boards (DCU error code '78')			
Solution 1. Check the harness between the engine and control boards. 2-1. Check if the engine board works properly when the printer resets. U5 pin 1 should be below 0.7V for about 122 ms after power is on, then remain over 3.5V. -Check U5 pin 2 = approx. 3.8V. If so, check R54 or R55. -Check U5 pin 3 = approx 4V. If so, check R53 or R56, or C35. -If the voltages are normal, and U5 pin 1 is below 0.7V, replace U5. -If all are normal, check CPU pin 55. If OK, replace CPU. 2-2. Check for X1 oscillation (6.94407MHz). 2-3. Replace EPROM in the engine board, if defective. 2-4. If all above are OK, replace CPU.			
Remark			
Others U4, U202, Q9			

Error code 3-060

Fault	Memory Overflow	Model	ML-6100
Description When printing, error message is printed out.			
Check Control board			
Cause Insufficient printer memory.			
Solution Install optional SIMM memory in the control board.			
Remark			
Others			

Error code 3-080

Fault	Defective motor operation	Model	ML-6100
Description Main motor is not driving when printing, and paper does not feed into the printer, resulting 'Jam 0'.			
Check 1. Engine board 2. Sub motor board (Refer to ⑫ on page 6-6.)			
Cause 1. Motor harness or CN104 may be defective. 2. U1 defective in the sub motor board.			
Solution 1. Check the motor harness. replace it, if defective. 2-1. Perform DCU diagnostic code 00 and check the motor operation. 2-2. With DCU code '00', check for pulse at U1 pin 8 and pin 13. Or, check the related parts. 2-3. With DCU code '00', check U1 pin 4 and pin 17 are over 4V. If the pins are below 1V, check R424. 2-4. If all above are OK, replace U1.			
Remark			
Others			

Error code 3-090

Fault	Ear-splitting noise or allophone	Model	ML-6100
Description While operating, ear-splitting noise occurs.			
Check LSU motor, Main motor bracket, Fan, Developer, Fuser gear			
Cause <ol style="list-style-type: none"> 1. Defective LSU motor and main motor bracket, or defective harness 2. Foreign materials in the fuser gear or developer 			
Solution <ol style="list-style-type: none"> 1-1. Replace the LSU, if defective. 1-2. Check the main motor bracket or its wiring harness. 1-3. Check pick-up ass'y rolls. 2. Reassemble or replace the fuser and developer if defective. 			
Remark			
Others			

Error code 3-100

Fault	No power	Model	ML-6100
Description When system power is turned on, all lamps on the operator panel do not come on.			
Check Engine board			
Cause <ol style="list-style-type: none"> 1. Defective harness between engine and control boards. 2. Defective harness between the control board and panel. 3. Defective fuse F151 4. Defective fuse F101 5. BD101 short. Check for the resistance value of Q102. 6. Defective U101 			
Solution <ol style="list-style-type: none"> 1. Check the connection between engine and control boards, and replace, if defective. 2. Check the connection between control board and operator panel. If defective, replace the harness. 3. Check F151 on the engine board. If open, measure the resistance between 5V and ground. If it is below 50 ohm, it is short. 4. Check F101 on the engine board. If open, check also : <ul style="list-style-type: none"> - R114 open - Q102, D-S, G-D, or G-S short - Defective BD101 			
Remark			
Others			

Error code 3-110

Fault	Vertical line getting curved	Model	ML-6100
Description When printing, vertical line gets curved.			
Check LSU Engine board			
Cause 1. For LSU, +24V supply is unstable in the engine board. 2. Difference according to LSU vendors			
Solution <ul style="list-style-type: none"> • Check the capacitor between CN 3 pin 5 and +24V is 100nF. • Check the resistor R63 (12.1Kohm). • Replace LSU. • Replace the main board. 			
Remark			
Others			

Fault	All LEDs On	Model	ML-6100
Description When turning on, all LEDs are continuously on.			
Check Fuser, LSU, Engine board			
Cause <ol style="list-style-type: none"> 1. Fuser error 2. LSU error 3. Bad connection between engine board and control board. 			
Solution <ol style="list-style-type: none"> 1. Replace the fuser. 2. Replace the LSU. 3. Check the wiring between the engine board and the control board. 4. Replace engine board. 			
Remark			
Others			

Fault	Jitter	Model	ML-6100
Description When printing, image is irregular.			
Check LSU, Motor bracket			
Cause <ol style="list-style-type: none"> 1. LSU hexahedron period 2. Defective motor bracket gears 			
Solution <ol style="list-style-type: none"> 1. Replace the LSU. 2. Replace the motor bracket ass'y. 			
Remark			
Others			

6. Exploded Views and Parts List

6-1 Main Exploded View

6-2 Main Parts List

6-3 Frame Ass'y Exploded View

6-4 Frame Ass'y Parts List

6-5 Cover Ass'y Exploded View

6-6 Cover Ass'y Parts List

6-7 MP-Tray/MPF Exploded View

6-7-1 MP-Tray Exploded View

6-7-2 MPF Exploded View

6-8 MP-Tray/MPF Parts List

6-8-1 MP-Tray Parts List

6-8-2 MPF Parts List

6-9 Motor-Main Exploded View

6-10 Motor-Main Parts List

6-11 Fuser Ass'y Exploded View

6-12 Fuser Ass'y Parts List

6-13 Pick-Up Exploded View

6-14 Pick-Up Parts List

6-15 Cassette Exploded View

6-16 Cassette Parts List

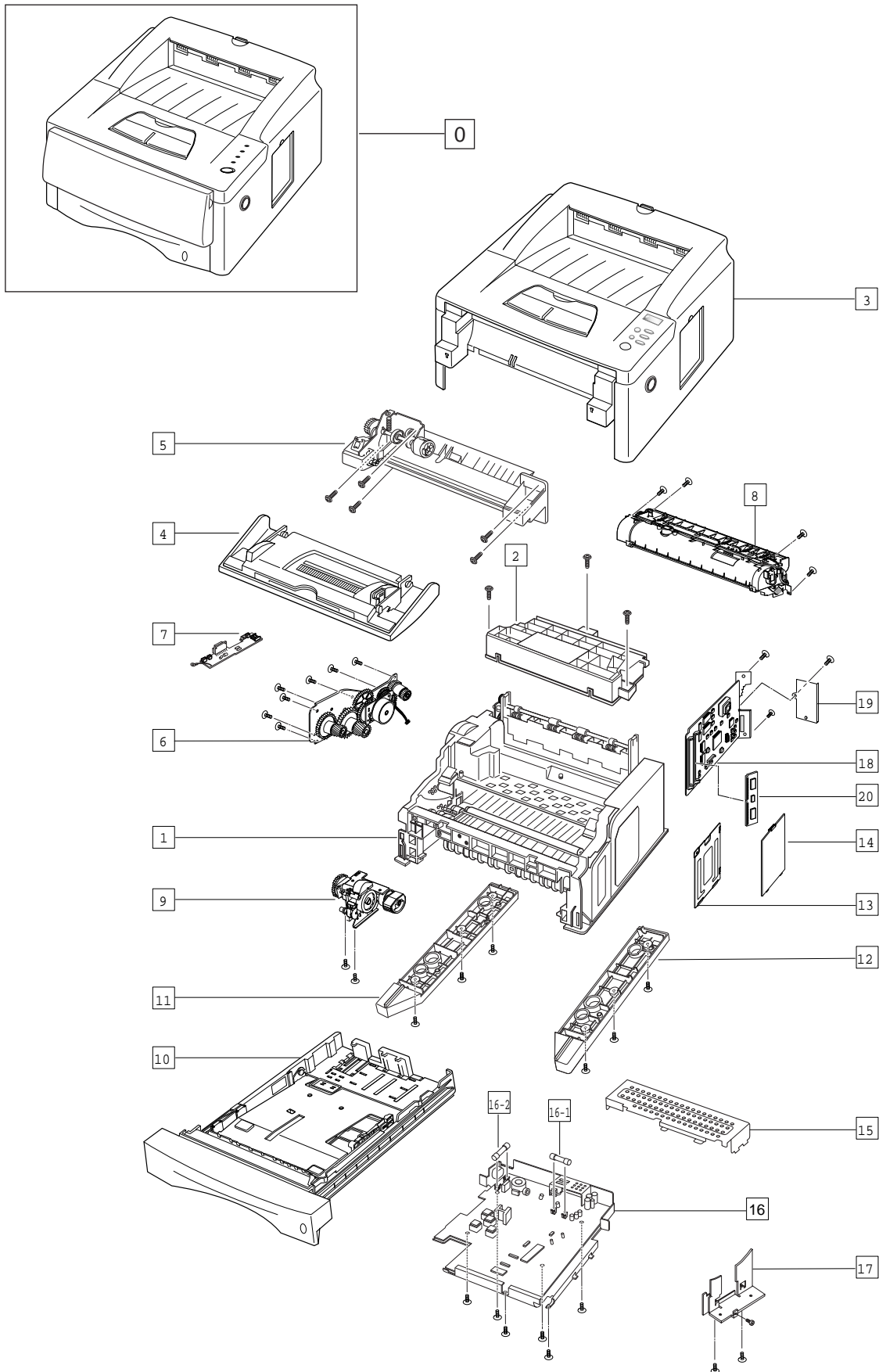
6-17 Second Cassette Frame Exploded View (option)

6-18 Second Cassette Frame Parts List (option)

6-19 Second Cassette Exploded View (option)

6-20 Second Cassette Parts List (option)

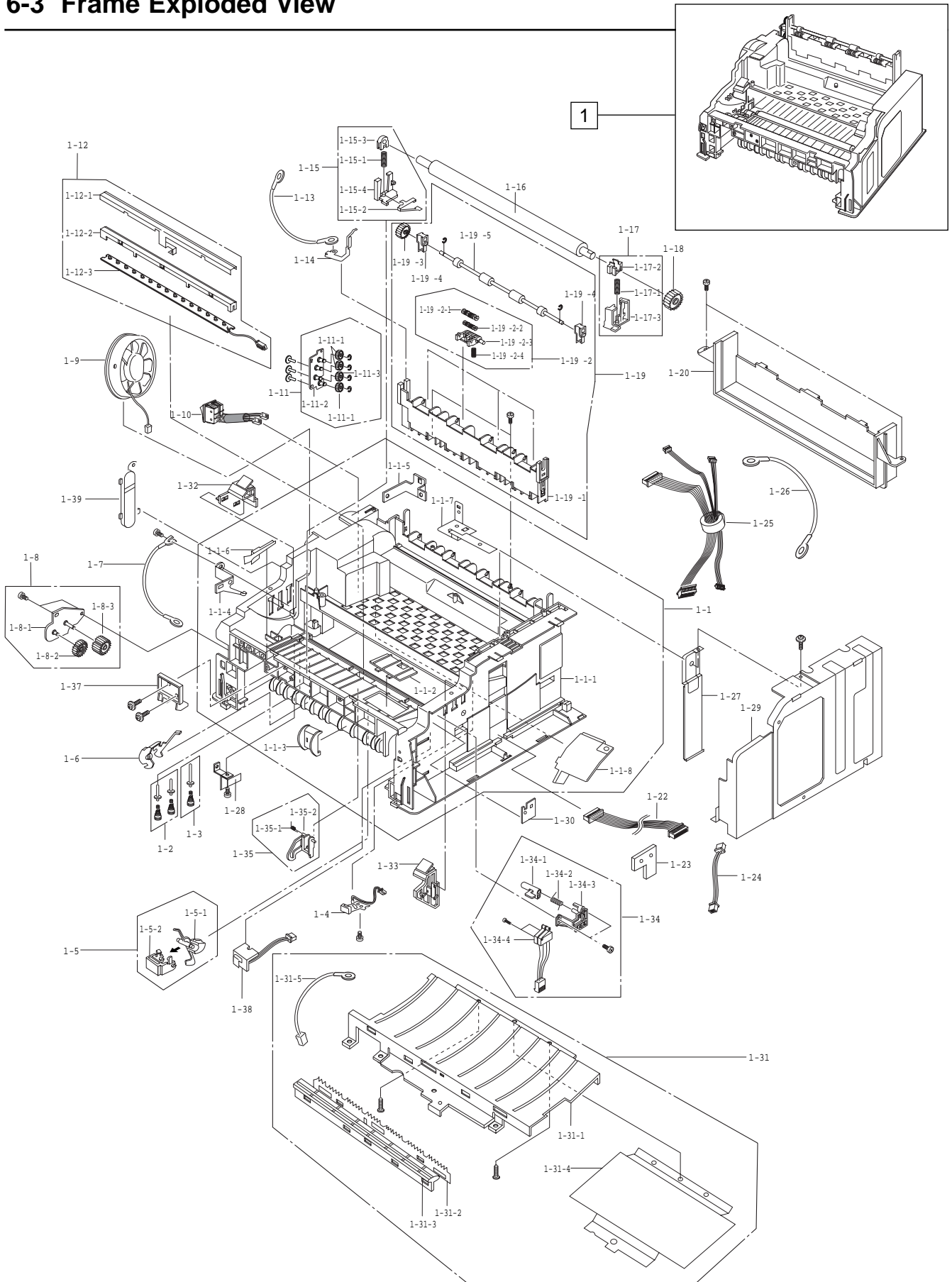
6-1 Main Exploded View



6-2 Main Parts List

NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
1		Frame Ass'y				1
2		UNIT-LSU 17833RPM	JC59-10507A			1
3		Cover Main Ass'y				1
4		MEA RACK-MP TRAY	JC97-01202D			1
5		MEA RACK-MPF	JC97-01201A			1
6		ELA-Hou- Motor Main	JC96-01099A			1
7		PBA MAIN-MOTOR SUB	JC92-01045A			1
8		Fuser Ass'y				1
9		MEA RACK-FEEDER	JC97-01078A			1
10		MEA RACK-CAST_A4	JC97-01261A			1
11		MEA RACK-BOTTOM L	JC97-01103B			1
12		MEA RACK-BOTTOM R	JC97-01102B			1
13		IPR-SHIELD SIMM	JC70-10234A			1
14		PMO-COVER SIMM	JC72-41224A			1
15		IPR-SHIELD SMPS	JC70-10227A			1
16		ELA HOU-ENG B'D	JC96-01350A			1 (110V)
	1			FUSE-FERRULE	3601-000003	1 (220V)
	2			FUSE-FERRULE	3601-000296	1
17		IPR-GROUND-ICU	JC70-10006A			1
18		ELA HOU-CONTROL XEU (A4)	JC96-01566A			1 (220V)
19		IPR-DUMMY_SRL(PLUS)	JC70-00015A			1
20		IC-RAM MODULE	1105-001213			1

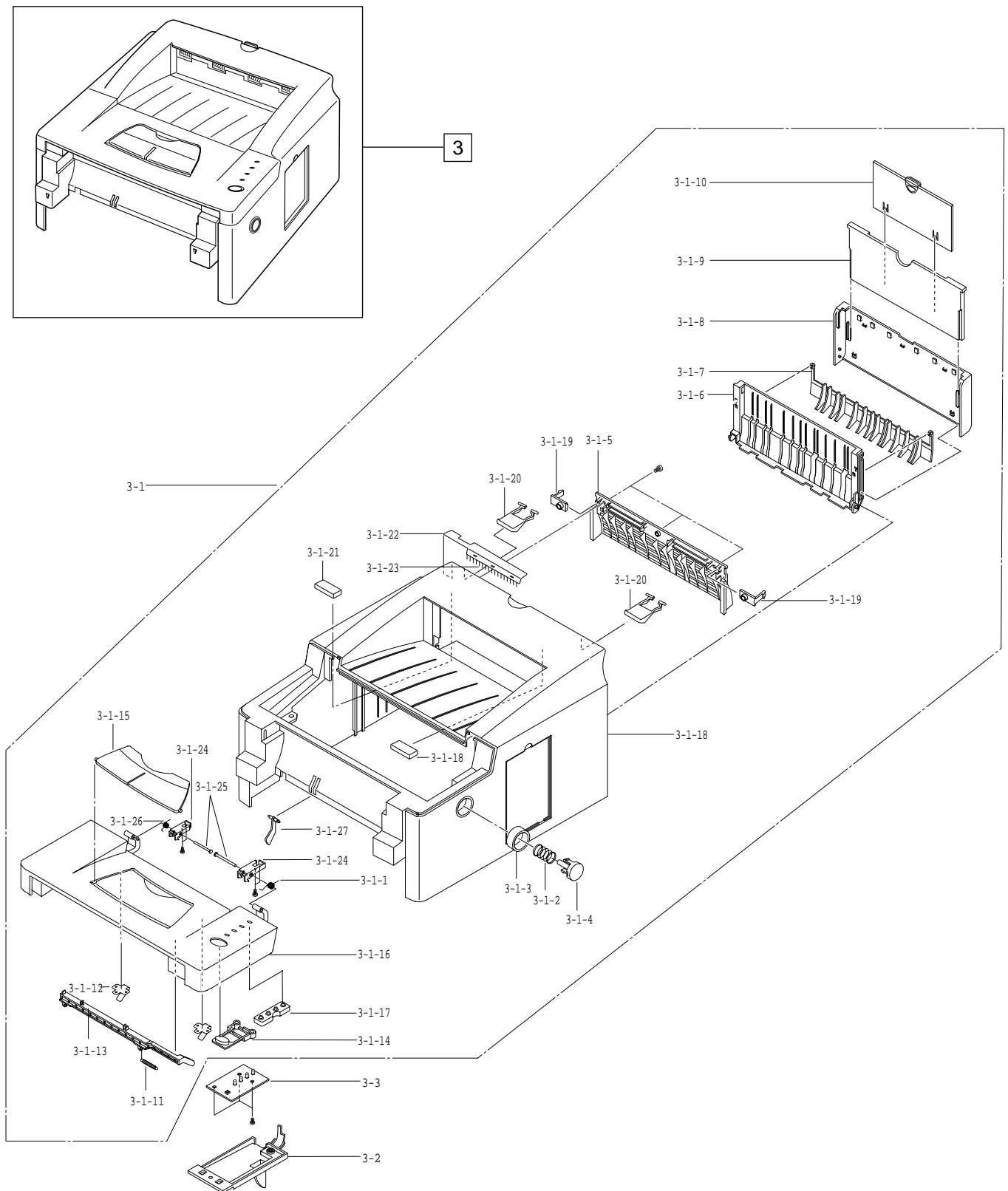
6-3 Frame Exploded View



6-4 Frame Ass'y Parts List

NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
1	1	Frame Ass'y MEA RACK-FRAME SUB	JC96-01446C	PMO-BASE FRAME(12)	JC72-41113A	1
				PMO-ROM COVER	JC72-41186A	1
				PMO-GUIDE_SKEW(12)	JC72-41350A	1
				IPR-GROUND_OPC(12)	JC70-11070A	1
				IPR-EARTH PLATE,FU	JC70-10911A	1
				IPR-GUIDE_DUST	JC70-11068A	1
				IPR-GND PLT G/TR(12)	JC70-10980A	1
				PMO-DAMPER_PLATE	JC72-41288A	1
	2	PBA MAIN-H/V,TERMINA	JC92-00338A			1
						2
						1
						1
	3	PBA MAIN-H/V,TERMINA	JC92-00339A			1
						1
						1
						1
	4	ELA HOU-THERMISTOR	JC96-01148A			1
						1
						1
						1
	5	MEA RACK-ACTUATOR TR	JC97-01208A			1
						1
						1
						1
	6	PMO-ACTUATOR FEED (12)	JC72-00012A			1
						1
						1
						1
	7	CBF HARNESS-PTL LUG	JC39-40576A			1
						1
						1
						1
	8	MEA RACK-PLT MP,DRV	JC97-01229A			1
						1
						1
						1
	9	FAN-DC	3103-001062			1
						1
						1
						1
	10	SWITCH	JC39-00004A			1
						1
						1
						1
	11	MEA RACK-BRKT_EXIT	JC97-01198A			1
						1
						1
						1
	12	ELA HOU-PTL	JC96-01150A			1
						1
						1
						1
	13	CBF HARNESS-GND WIRE	JC39-40546A			1
						1
						1
						1
	14	IPR-GROUND_EXIT	JC70-11058A			1
						1
						1
						1
	15	MEA RACK-TR_HOLD L	JC97-01079A			1
						1
						1
						1
	16	ROLLER-TRANSFER	JC75-10962A			1
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	17	MEA RACK-TR HOLDER,R	JC97-01071A			1
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						1
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	18	GEAR-TRANSFER(12)	JC66-40949A			1
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	19	MEA RACK-HOU EXIT	JC97-01104A			1
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	2	MEA RACK-EXIT ROLLER	JC97-01098A			1
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	5					1
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	20	PMO-GUIDE-FUSER	JC72-40233A			1
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	22	CBF-HARNESS	JC39-40009A			1
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	23	PBA MAIN-CLN	JC92-01084A			1
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	24	CBF-HARNESS	JC39-40513A			1
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						1
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	25	LSU-HARNESS	JC39-40540A			1
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						1
						1
	26	CBF HARNESS-	JG39-40179A			1
						1
						1
						1
	27	IPR-SHIELD_CAP WIRE	JC70-10003A			1
						1
						1
						1
	28	IPR-GROUND_PLATE MOT	JC70-10013A			1
						1
						1
						1
	29	IPR-SHIELD_ICU	JC70-10225A			1
						1
						1
						1
	30	MPR-FILM_EMI	JC74-10908A			1
						1
						1
						1
	31	MEA RACK-TR GUIDE,12	JC97-01183A			1
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						1
						1
	32	ELA HOU-DEVELOPER,GU	JC96-00290A			1
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						1
						1
	33	ELA HOU-DEVELOPER,GUID	JC96-00291A			1
						1
						1
						1
	34	ELA HOU-SENSOR C/O	JC96-01353A			1
						1
						1
						1
	35	MEA RACK-EMPTY_ACT	JC97-01207A			1
						1
						1
						1
	36	IPR-GROUND_MP(R)	JC70-11088A			1
						1
						1
						1
	37	PMO-GUIDE P/U,PATH	JC72-41361A			1
						1
						1
						1
	38	ELA HOU-CLEANIG PLT	JC96-01229A			1
						1
						1
						1
	39	CAP-GND WIRE	JC72-00011A			1
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6-5 Cover Ass'y Exploded View

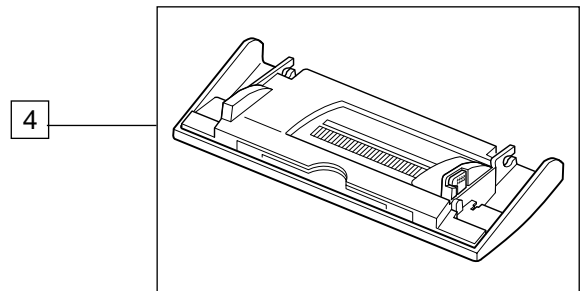
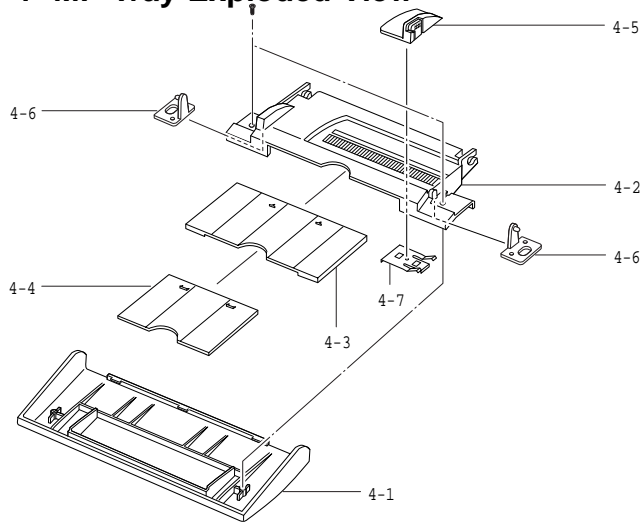


6-6 Cover Ass'y Parts List

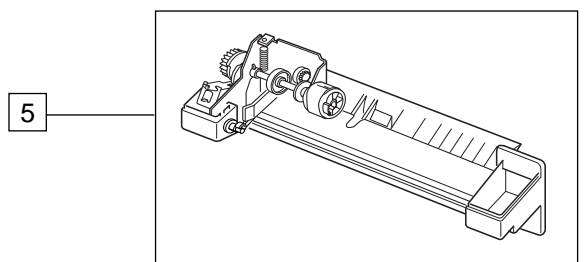
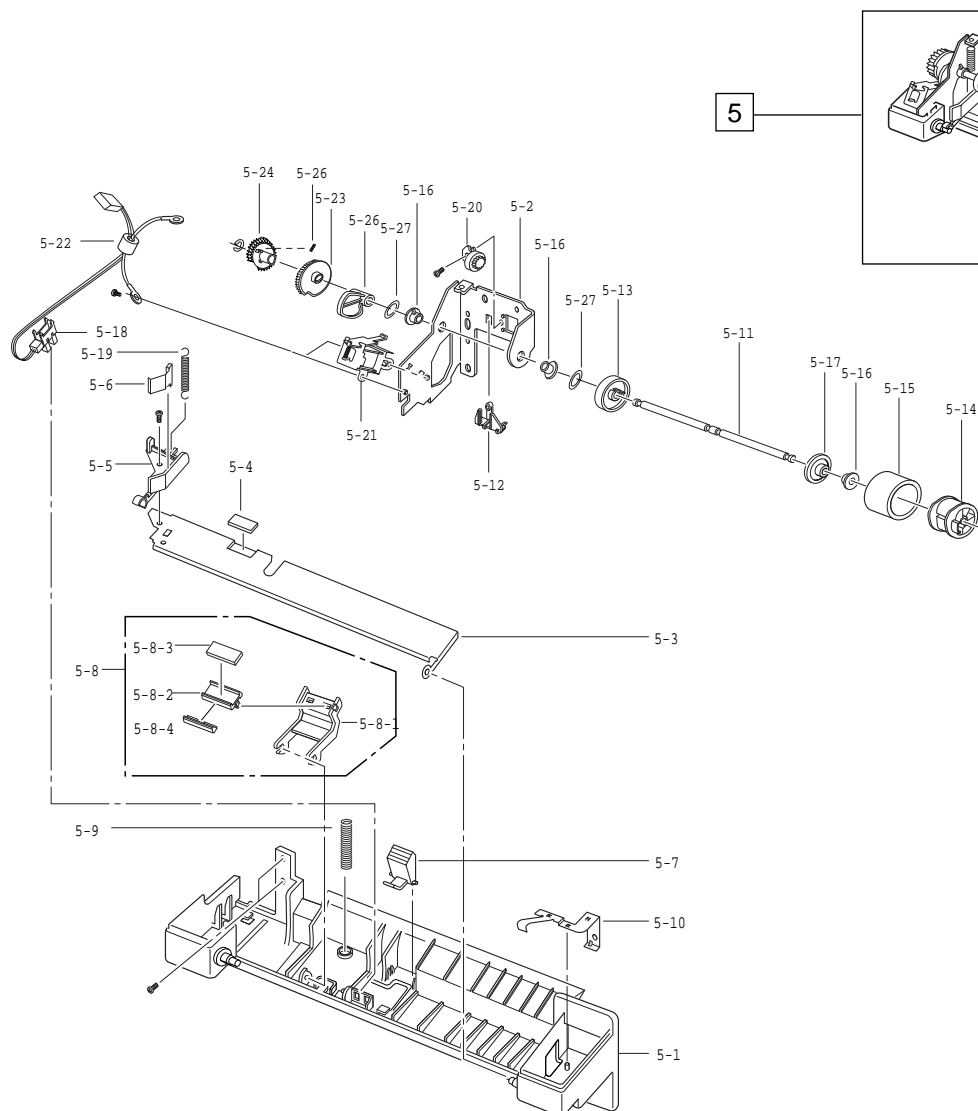
NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
3	1	Cover Main Ass'y ELA HOU-CVR MAIN	JC96-01477A			1
				SPRING-COVER_OPEN,R	JC61-70944A	1
				SPRING-OPEN	JC61-70975A	1
				PMO-HSG_BUTTON C/O	JC72-41366B	1
				PMO-BUTTON C/O	JC72-41367B	1
				PMO-GUIDE_EXIT UP	JC72-41369A	1
				PMO-SACKER_EXIT A	JC72-41371B	1
				PMO-GUIDE_EXIT LR	JC72-41374B	1
				PMO-COVER_EXIT	JC72-41370B	1
				PMO-SACKER_EXIT B	JC72-41372B	1
				PMO-SACKER_EXIT C	JC72-41373B	1
				SPRING-ES	6107-000133	1
				IPR-PLATE SPRING DEV	JC70-10223A	2
				PMO-LEVER_HOOK	JC72-40325A	1
				PMO-BUTTON_PANEL,LED	JC72-41219A	1
				PMO-SACKER SUB	JC72-41220A	1
				PMO-CVR_FRONT LED	JC72-41368B	1
				PMO-WINDOW_LED	JC72-41397A	1
				PMO-COVER_MAIN	JC72-41365B	1
				PMO-LOCKER_EXIT	JC72-41395A	1
				PMO-GUIDE_DUMMY	JC72-41111A	2
				RCT-PAD_DUMMY	JC73-30912A	2
				IPR-GROUND_ANTI	JC70-11057A	1
				MCT-BRUSH_ANTI	JC74-40902A	1
				PMO-HINGE HSG,R	JC72-41216A	2
				IPR-SHAFT COVER OPEN	JC70-10228A	1
				SPRING-COVER_OPEN,L	JC61-70945A	1
				PMO-LEVER EMPTY MP	JC72-41353A	1
	2	PMO-CAP_PANEL WIRE	JC72-41375B			1
	3	PBA BPA-PANEL,LED	JC92-00346A			

6-7 MP-Tray/MPF Exploded View

6-7-1 MP-Tray Exploded View



6-7-2 MPF Exploded View



6-8 MP-Tray/MPF Parts List

6-8-1 MP-Tray Parts List

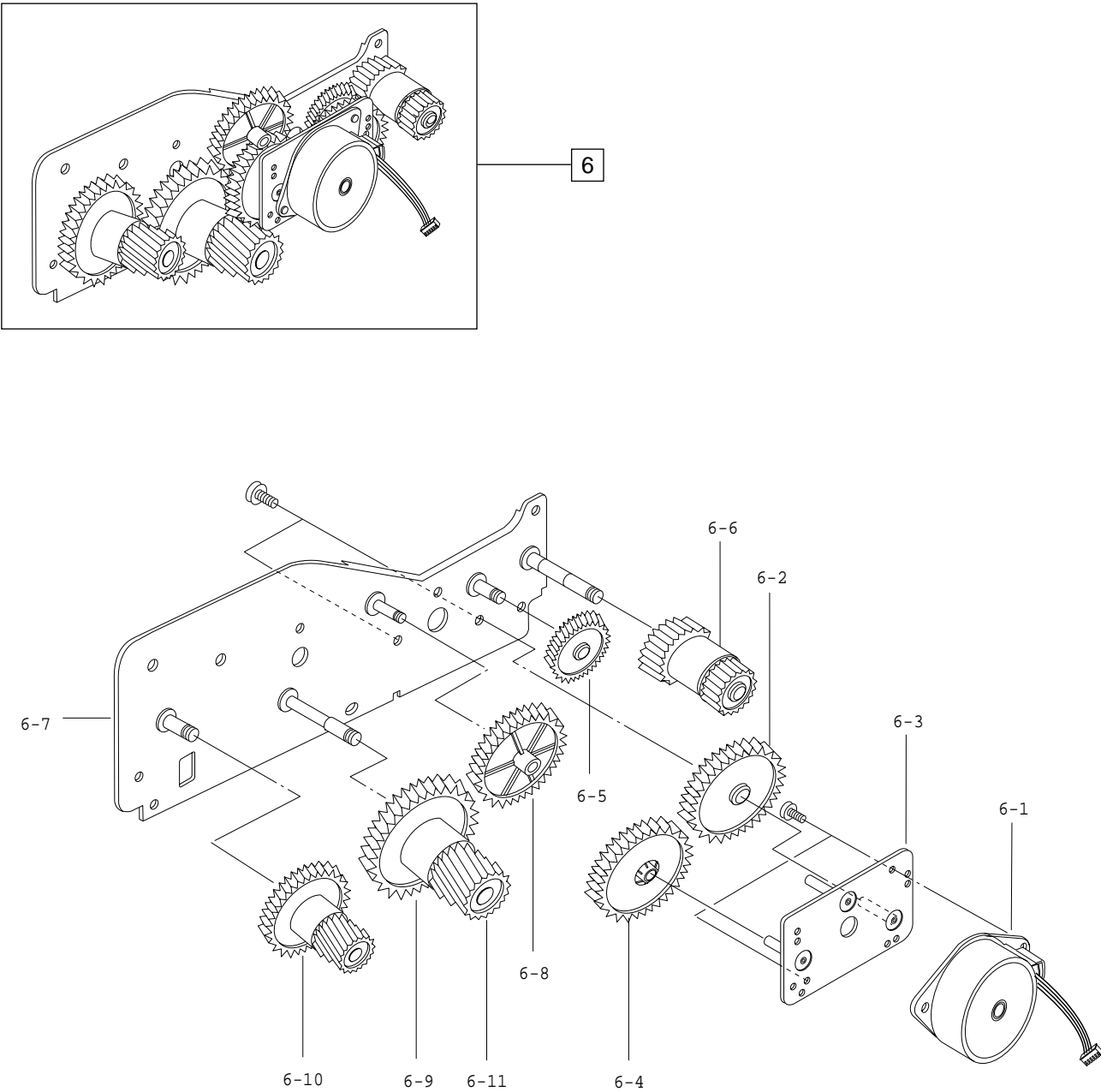
NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
4		MEA RACK-MP TRAY	JC97-01202D			1
	1			PMO-COVER_MP	JC72-41377D	1
	2			PMO-TRAY_MP,A	JC72-41378B	1
	3			PMO-TRAY_MP,B	JC72-41379B	1
	4			PMO-TRAY_MP,C	JC72-41380B	1
	5			PMO-ADJUSTER_P SIDE	JC72-41381B	1
	6			PMO-LOCKER_MP	JC72-41398A	2
	7			IPR-GUIDE LATCH	JB70-10906A	1

6-8 MP-Tray/MPF Parts List

6-8-2 MPF Parts List

NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
5		MEA RACK-MPF	JC97-01201A			1
	1			PMO-FRAME_MP	JC72-41352A	1
	2			IPR-BRACKET_MP	JC70-11080A	1
	3			IPR-PLT KNOCK_UP,MP	JC70-11081A	1
	4			MPR-PAD_K/U,MP	JC74-10911A	1
	5			PMO-GUIDE_K/U,MP	JC72-41354A	1
	6			IPR-GUIDE_SIDE,MP	JC70-11082A	1
	7			PMO-ADJUSTER_END,MP	JC72-41355A	1
	8			MEC-HOLDER PAD ASS'Y	JC75-00005A	1
				PMO-HOLDER_P/U,MP	JC72-41356A	1
				PMO-HOLDER_PAD,MP	JC72-41357A	1
				RCT-PAD_P/U,MP	JC73-30913A	1
				IPR-GUIDE_P/U,MP	JC70-11083A	1
	9			SPRING-PICK UP,MP	JC61-70973A	1
	10			IPR-GROUND_MP	JC70-11084A	1
	11			ICT-SHAFT_P/U,MP	JC70-40920A	1
	12			PMO-GUIDE_LEFT,PATH	JC72-41360A	1
	13			PMO-ROLLER_IDLE,P/U	JC72-41362A	1
	14			PMO-HOUSING_P/U,MP	JC72-41363A	1
	15			RMO-RUBBER_P/U,MP	JC73-40916A	1
	16			PMO-BUSHING_P/U,MP	JC72-41364A	2
	17			GEAR-TRANS,MP	JC66-40965A	1
	18			PHOTO-INTERRUPTER	0604-001095	1
	19			SPRING-KNOCKUP	JC61-00001A	1
	20			DAMPER	JC72-00010A	1
	21			SOLENOIDE	JC33-00001A	1
	22			CBF HARNESS MP SENSOR	JC39-00003A	1
	23			PMO-HOLDER-CAM,MPF	JC72-00055A	1
	24			PMO-GEAR-P/U,MPF	JC72-00056A	1
	25			PMO-CAM-PICKUP,MPF	JC72-00057A	1
	26			SPRING-CAM,MP	JC61-00003A	1
	27			WASHER-PLAIN	6031-000021	2

6-9 Motor-Main Exploded View



6-10 Motor-Main Parts List

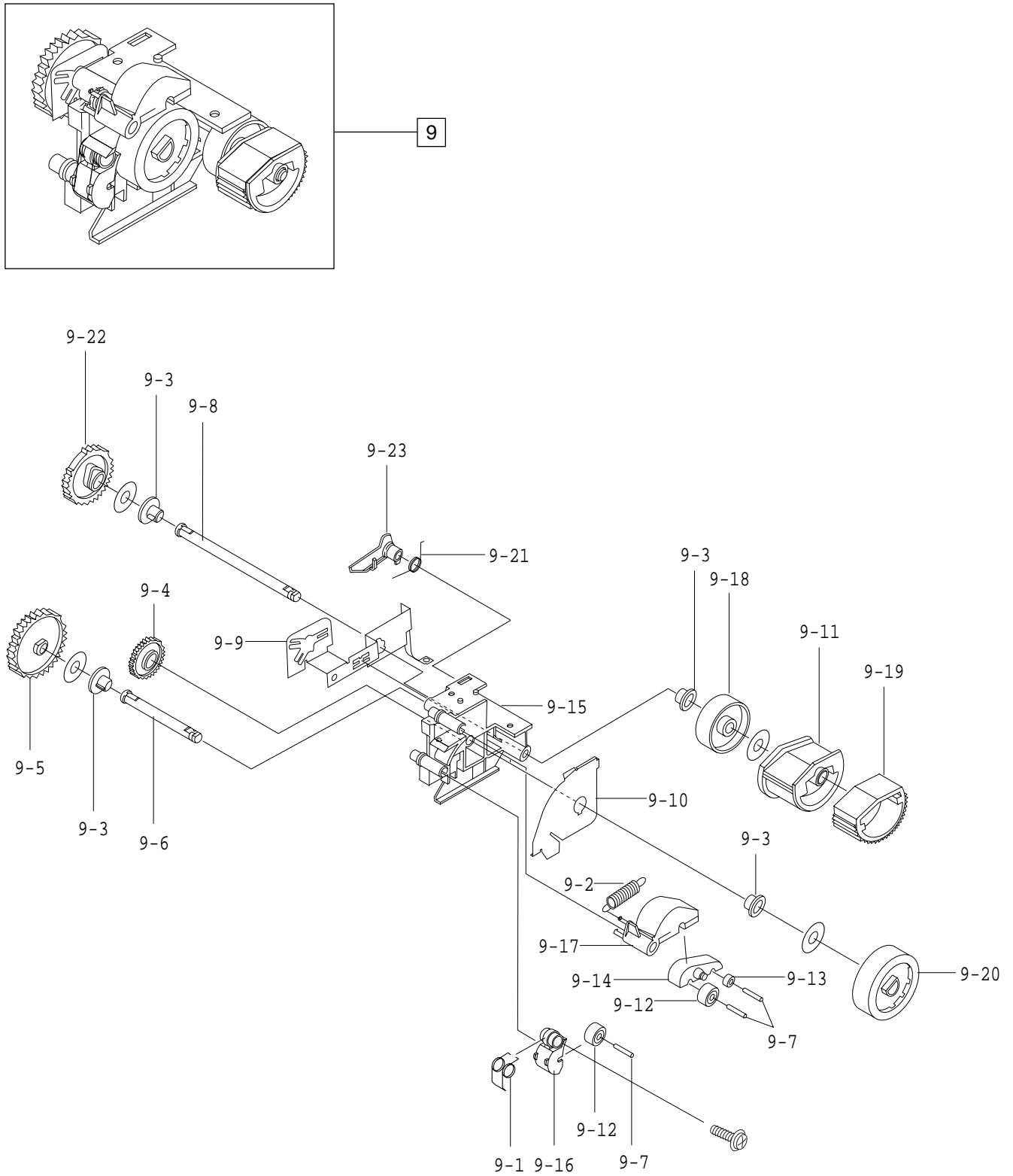
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6		ELA-Hou- Motor Main	JC96-01099A			
	1			MOTOR-STEP	3101-001144	1
	2			GEAR-125/18	JC66-40376A	1
	3			IPR-BRKT_MOTOR	JC70-10985A	1
	4			GEAR-Z132/50(12)	JC66-40959A	1
	5			GEAR-IDLE FU	JC66-40377A	1
	6			GEAR-FUSER DRIVE	JC66-40378A	1
	7			IPR-BRKT_GEAR	JC70-10984A	1
	8			GEAR-IDLE OPC(12)	JC66-40960A	1
	9			GEAR-OPC DRIVE(12)	JC66-40961A	1
	10			GEAR-FEED DRV(12)	JC66-40962A	1
	11			GEAR-OPC DRV2	JC66-40910A	1
	12			FILM-BRACKET	JC73-00002A	1



6-12 Fuser Ass'y Parts List

NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
8		Fuser Ass'y				
	1	PMO-ACTUATOR_EXIT	JC72-41079A			1
	2	ELA HOU-FUSER(110V)	JC96-01093A			1 (110V)
	2	ELA HOU-FUSER(220V)	JC96-01094A			1 (220V)
	1			LAMP-HALOGEN	4713-001076	1 (110V)
	1			LAMP-HALOGEN	4713-001075	1 (220V)
	2			SPRING-CLAW	JC61-70922A	5
	3			LABEL(R)-HOT FU	JC68-30512A	1
	4			NPR-ELECTRODE FUSER	JC71-10902A	1
	5			PMO-CLAW SEPARATOR	JC72-41064A	5
	6			THERMOSTAT	4712-000001	1
	7			NPR-ELECTRODE FU R	JC71-10201A	1
	8			PMO-FUSER_UPPER	JC72-41073A	1
	9			PMO-ROLLER_EXIT F/UP	JC72-40342A	4
	10			IPR-SPRING_EXIT,PLT	JC70-11067A	4
	11			THERMISTOR-NTC	1404-001117	1
	12			CBF HARNESS-FU(110V)	JC39-40609A	1 (110V)
	12			CBF HARNESS-FU(220V)	JC39-40610A	1 (220V)
	13			SPRING-PR	JC61-70923A	2
	14			BEARING-EXIT FU L	JC66-10200A	1
	15			BEARING-EXIT FU	JC66-10201A	1
	16			GEAR-EXIT	JC66-40209A	1
	17			GEAR-FUSER,Z32	JC66-40926A	1
	18			IPR-FUSER_LOWER	JC70-10983A	1
	19			NEX-ROLLER_HEAT	JC71-20901A	1
	20			PMO-GUIDE_PATH	JC72-41074A	1
	21			PMO-FUSER_REAR	JC72-41075A	1
	22			PMO-BUSHING HR,L	JC72-41076A	1
	23			PMO-BUSHING HR,R	JC72-41077A	1
	24			PMO-BUSHING PR	JC72-41078A	2
	25			MEC-ROLL_EXIT,FU/LR	JC75-10955A	1
	26			MEC-ROLLER_PRESSURE	JC75-10956A	1
	27			GEAR-EXIT,IDLE(Z17)	JC66-40964A	2

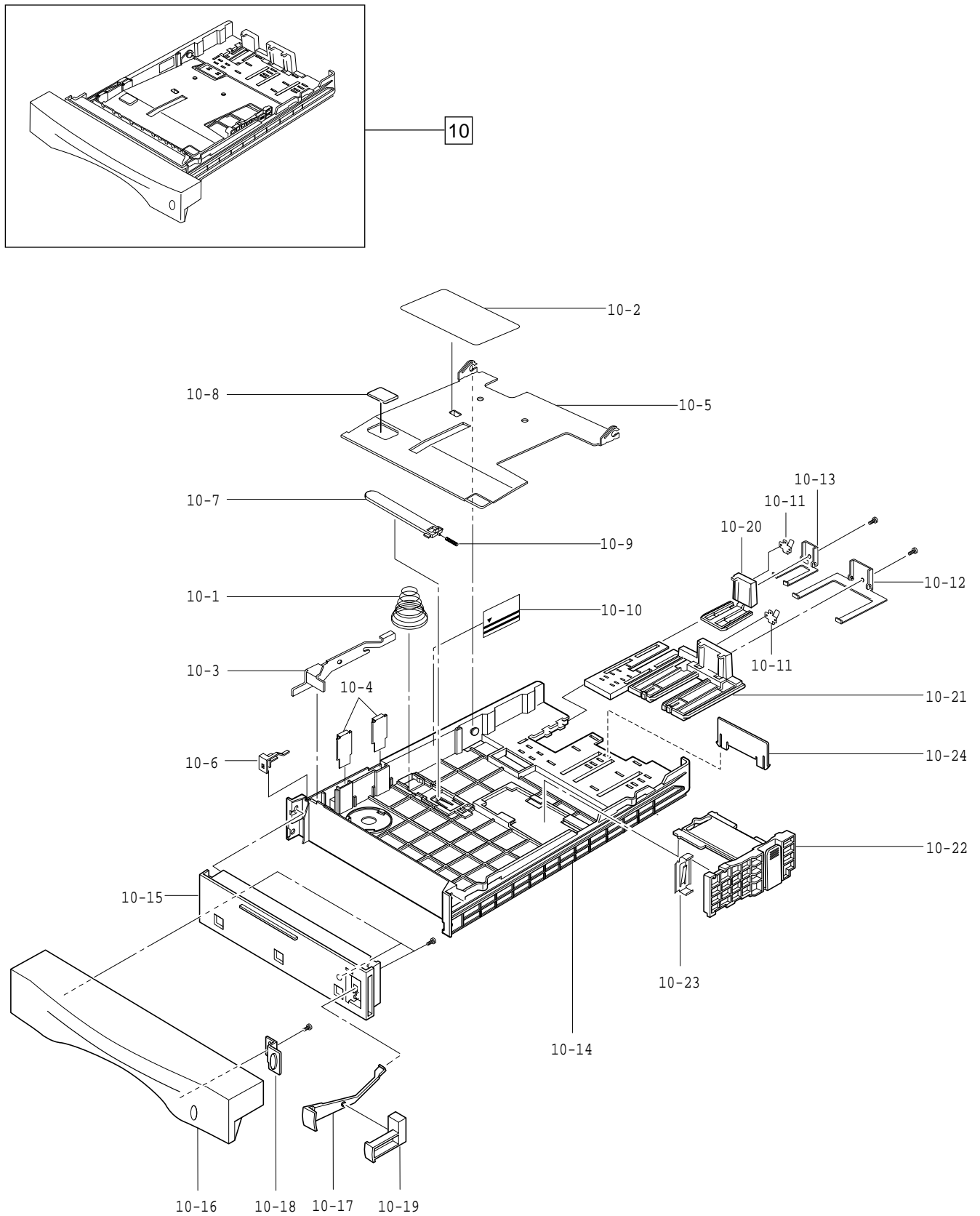
6-13 Pick-Up Exploded View



6-14 Pick-Up Parts List

NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
9		MEA RACK-FEEDER	JC97-01078A			1
	1			SPRING-FEED(1)	JC61-70941A	1
	2			SPRING-FEED(2)	JC61-70942A	1
	3			BEARING-PICK UP	JC66-10202A	4
	4			GEAR-P/UP DRIVE	JC66-40219A	1
	5			GEAR-FEED	JC66-40375A	1
	6			IPR-SHAFT FEED	JC70-10229A	1
	7			IPR-SHAFT FEED IDLER	JC70-10230A	1
	8			IPR-SHAFT PICK UP	JC70-10231A	1
	9			IPR-GND_FEED	JC70-10991A	1
	10			IPR-GUIDE_FEED	JC70-10992A	1
	11			PMO-HOUSING P/UP	JC72-40252A	1
	12			PMO-ROLLER FEED L	JC72-40261A	2
	13			PMO-ROLLER FEED S	JC72-40262A	1
	14			PMO-SUB HOLDER FEED	JC72-40266A	1
	15			PMO-FRAME_FEED	JC72-41115A	1
	16			PMO-HOLDER FEED(1)	JC72-41184A	1
	17			PMO-HOLDER FEED(2)	JC72-41185A	1
	18			PMO-IDLE PICK_UP	JC72-41234A	1
	19			RMO-RUBBER PICK_UP	JC73-40907A	1
	20			PMO-ROLL_FEED,DRV 12	JC72-41295A	1
	21			SPRING-PICKUP(12)	JC61-70966A	1
	22			GEAR-PICK UP(12)	JC66-40958A	1
	23			PMO-LEVER_PICKUP	JC72-41339A	1

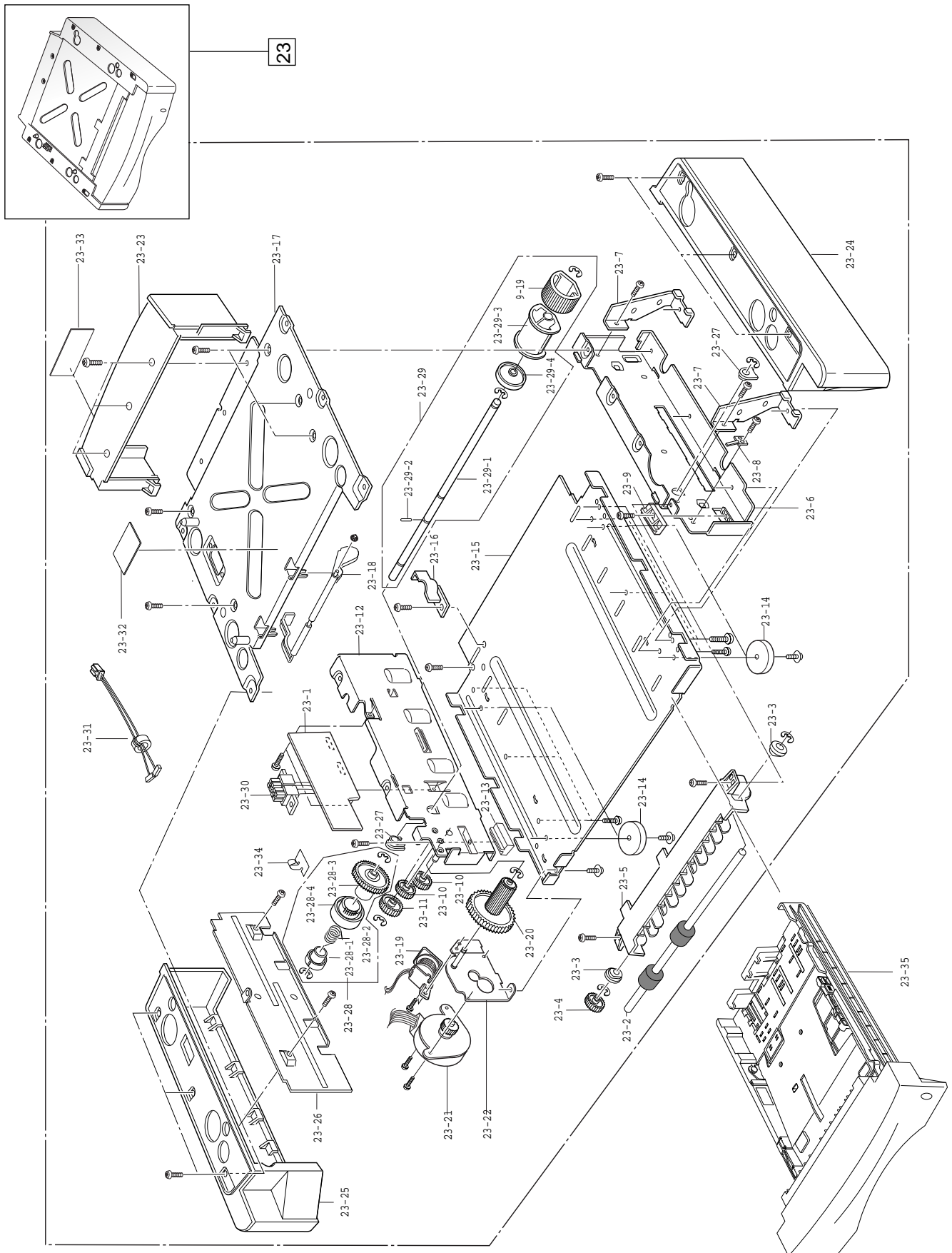
6-15 Cassette Exploded View



6-16 Cassette Parts List

NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
10		MEA RACK-CAST_X/A4	JC97-01261A			1
	1			SPRING-KNOCK UP(12)	JC61-70951A	1
	2			LABEL(R)-PLATE	JC68-30929A	1
	3			IPR-FINGER	JC70-10213A	1
	4			IPR-GUIDE PAPER	JC70-10219A	2
	5			IPR-PLT KNOCK UP(12)	JC70-11022A	1
	6			PMO-HOLDER FINGER	JC72-41182A	1
	7			PMO-LOCKER PLATE	JC72-41210A	1
	8			RPR-MMP PAD	JC73-10911A	1
	9			SPRING-LOCKER,PLATE	JG61-70531A	1
	10			LABEL(R)-HEIGHT	JG68-30572A	1
	11			IPR-TENSION_LETTER	JC70-11085A	2
	12			IPR-BRACKET_LEGAL	JC70-11086A	1
	13			IPR-BRACKET_LETTER	JC70-11087A	1
	14			PMO-FRAME_CASSETTE	JC72-41382B	1
	15			PMO-GUIDE_CASSETTE	JC72-41383B	1
	16			PMO-GUIDE_S CAST,P	JC72-41384B	1
	17			PMO-INDICATOR_EMPTY	JC72-41385B	1
	18			PMO-WINDOW_EMPTY	JC72-41386A	1
	19			PMO-HOLDER_INDICATOR	JC72-41388A	1
	20			PMO-GUIDE_LETTER	JC72-41392A	1
	21			PMO-GUIDE_LEGAL	JC72-41393A	1
	22			PMO-ADJUSTER_S CAST	JC72-41394A	1
	23			IPR-GUIDE_PLATE	JC70-10993A	1
	24			PMO-GUIDE REAR	JC72-41180A	1

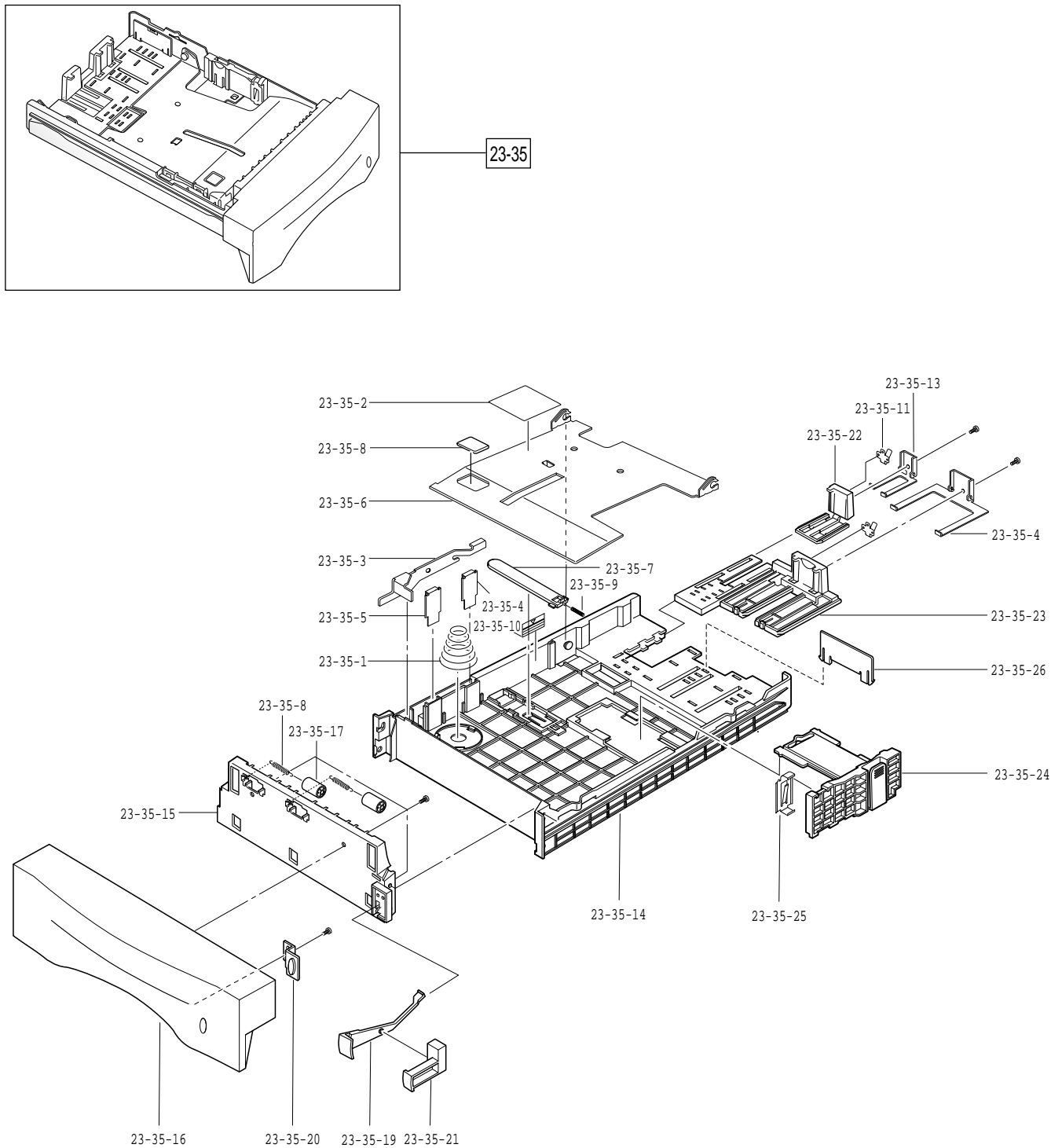
6-17 Second Cassette Frame Exploded View (option)



6-18 Second Cassette Frame Parts List (option)

NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
23		ELA HOU-SCF(ML6100)				1
	1			PBA MAIN-SCF	JC92-01077A	1
	2			MEC-ROLLER_INNER UPP	JC75-10028B	1
	3			BEARING-ROLLER IDLER	JC66-10304A	2
	4			GEAR-FEED	JC66-40014A	1
	5			PMO-GUIDE-INNER UP	JC72-40307A	1
	6			IPR-FRAME_RIGHT(SCF)	JC70-10022A	1
	7			IPR-BRKT_SUPPORT	JC70-10461A	2
	8			IPR-GROUND_ROLLER	JC70-10467A	1
	9			PMO-GUIDE_RAIL	JC72-40371A	1
	10			GEAR-IDLE 19	JC66-40012A	2
	11			GEAR-IDLER OPTION	JC66-40365A	1
	12			IPR-FRAME_LEFT(SCF)	JC70-10023A	1
	13			PMO-GUIDE_RAIL	JC72-40371A	1
	14			FOOT-RUBBER	JC61-40301A	4
	15			IPR-FRAME_LOWER(12)	JC70-11065A	1
	16			PMO-STOPPER_SCF	JC72-41347A	1
	17			IPR-FRAME_UPPER	JC70-10027A	1
	18			PMO-ACTUATOR_ARM	JC72-40370A	1
	19			SOLENOID-MAGNET	JC33-10001A	1
	20			GEAR-DOUBLE OPTION	JC66-40363A	1
	21			MOTOR-STEP	3101-001158	1
	22			IPR-BRKT_MOTOR(SCF)	JC70-10986A	1
	23			PMO-COVER_REAR	JC72-40362B	1
	24			PMO-COVER_RIGHT.SCF/P	JC72-41390B	1
	25			PMO-COVER_LEFT.SCF/P	JC72-41389B	1
	26			IPR-SHIELD-PCB(SCF)	JC70-10451A	1
	27			PMO-BEARING_FEED	JC72-40531A	2
	28			ELA HOU-FEEDER CLUTC	JC96-00406B	1
		1		PMO-HUB_CLUTCH	JC72-40587A	1
		2		SPRING-TS, CLUTCH	JC61-70331A	1
		3		GEAR-P/UP OPTION	JC66-40364A	1
		4		PMO-COLLAR_CLUTCH_PI	JC72-40569B	1
	29			MEA RACK-FEEDER P/U	JC97-01212A	1
		1		ICT-SHAFT_PICK UP	JC70-40002A	1
		2		ICT-PIN_PARELLED,P/U	JC70-40360A	1
		3		PMO-HOLDER_HOUSING	JC72-40654A	1
		4		PMO-IDLE_SCF	JC72-41348A	1
9	19			RMO-RUBBER PICK_UP	JC73-40907A	1
23	30			CBF HARNESS-SCF CORE	JC39-40541A	1
	31			CBF HARNESS-	JC39-40305B	1
	32			LABEL WARNING	JC68-00059A	1
	33			LABEL SCF		1
	34			CABLE CLAMP	6502-000003	1

6-19 Second Cassette Exploded View (option)



6-20 Second Cassette Parts List (option)

NO	Seq	Ass'y Name	Ass'y Code	Part Name	Sub Code	Q'ty
23	35	MEA RACK-CAST,SCF	JC97-01240C			1
	1			SPRING-KNOCK UP(12)	JC61-70951A	1
	2			LABEL(R)-PLATE	JC68-30929A	1
	3			IPR-FINGER	JC70-10213A	1
	4			IPR-GUIDE PAPER	JC70-10219A	1
	5			IPR-GUIDE_SCF	JC70-11076A	1
	6			IPR-PLT KNOCK UP(12)	JC70-11022A	1
	7			PMO-LOCKER PLATE	JC72-41210A	1
	8			RPR-MMP PAD	JC73-10911A	1
	9			SPRING-LOCKER,PLATE	JG61-70531A	1
	10			LABEL(R)-HEIGHT	JG68-30572A	1
	11			IPR-TENSION_LETTER	JC70-11085A	2
	12			IPR-BRACKET_LEGAL	JC70-11086A	1
	13			IPR-BRACKET_LETTER	JC70-11087A	1
	14			PMO-FRAME_CASSETTE	JC72-41382B	1
	15			PMO-GUIDE-CST	JC72-40306B	1
	16			PMO-GUIDE 2'ND CAST	JC72-41391B	1
	17			PMO-ROLLER_EXIT	JC72-40361A	2
	18			SPRING-ES	6107-001047	2
	19			PMO-INDICATOR_EMPTY	JC72-41385A	1
	20			PMO-WINDOW_EMPTY	JC72-41386A	1
	21			PMO-HOLDER_INDICATOR	JC72-41388B	1
	22			PMO-GUIDE_LETTER	JC72-41392B	1
	23			PMO-GUIDE_LEGAL	JC72-41393B	1
	24			PMO-ADJUSTER_S CAST	JC72-41394A	1
	25			IPR-GUIDE_PLATE	JC70-10993A	1
	26			PMO-GUIDE REAR	JC72-41180B	1

SEC CODE	DESCRIPTION	SPEC	LOCATION	Q'TY
JC96-01350A	ELA HOU-ENG B'D,XRX	ML-6100,XEROX,USA,-,-,-,-		1
JC92-01083A	PBA MAIN-ENGINE	ML-6100,SEC,-,110V,-,-,-,-		1
0201-000008	ADHESIVE-HM	PP_#3748,WHT,6500CPS,-		0.005
0401-000005	DIODE-SWITCHING	1N4148,100V,200MA,DO-35,TP	D154,D209	2
0401-000005	DIODE-SWITCHING	1N4148,100V,200MA,DO-35,TP	D215,D220	2
0401-000005	DIODE-SWITCHING	1N4148,100V,200MA,DO-35,TP	D221,D222,D223,D224	4
0401-000005	DIODE-SWITCHING	1N4148,100V,200MA,DO-35,TP	D225,D226,D227,D228	4
0401-000005	DIODE-SWITCHING	1N4148,100V,200MA,DO-35,TP	D229,D230,D231,D232	4
0401-000005	DIODE-SWITCHING	1N4148,100V,200MA,DO-35,TP	D233,D401	2
0401-000005	DIODE-SWITCHING	1N4148,100V,200MA,DO-35,TP	D4,D5,D6,D7,D101	5
0401-000005	DIODE-SWITCHING	1N4148,100V,200MA,DO-35,TP	D500,D501,D502	3
0401-000005	DIODE-SWITCHING	1N4148,100V,200MA,DO-35,TP	D504,D505	2
0402-000012	DIODE-RECTIFIER	UF4007,1KV,1A,DO-41,TP	D102	1
0402-000104	DIODE-BRIDGE	D3SBA60,600V,4A,-,ST	DB101	1
0402-000129	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP	D1,D216,D217	3
0402-000129	DIODE-RECTIFIER	1N4003,200V,1A,DO-41,TP	D503	1
0402-000351	DIODE-RECTIFIER	1N4937,600V,1A,DO-41,TP	D103	1
0402-000468	DIODE-RECTIFIER	ESJS58-06,6KV,2mA,DO-201	D205,D206,D207,D208	4
0402-001193	DIODE-RECTIFIER	SHV-04,4KV,20mA,-,TP	D201,D202,D203,D204	4
0402-001193	DIODE-RECTIFIER	SHV-04,4KV,20mA,-,TP	D210	1
0403-000227	DIODE-ZENER	1N751A,5.1V,5%,500mW,DO-35,TP	ZD102	1
0403-000346	DIODE-ZENER	UZ33B,33V,30-36V,500mW,DO-35,T	ZD152,ZD204,ZD205	3
0403-000356	DIODE-ZENER	UZ5.6BCB,5.6V,5.46-5.7V,500mW,	ZD151,ZD201	2
0403-000475	DIODE-ZENER	1N5274B,130V,5%,500mW,DO-35,TP	ZD203	1
0501-000010	TR-SMALL SIGNAL	KSC1008,NPN,800mW,TO-92,TP,120	Q211	1
0501-000010	TR-SMALL SIGNAL	KSC1008,NPN,800mW,TO-92,TP,120	Q3,Q4,Q8,Q10,Q208	5
0501-000010	TR-SMALL SIGNAL	KSC1008,NPN,800mW,TO-92,TP,120	Q500,Q503	2
0501-000294	TR-SMALL SIGNAL	KSA708-Y,PNP,800mW,TO-92,TP,12	Q207,Q209	2
0501-000294	TR-SMALL SIGNAL	KSA708-Y,PNP,800mW,TO-92,TP,12	Q501,Q502	2
0502-000245	TR-POWER	KSB1151-Y,PNP,1.3W,TO-126,-,16	Q9	1
0502-001124	TR-POWER	KSD526,NPN,30W,TO-220,BK,120-2	Q201,Q202,Q203,Q204	4
0604-000001	PHOTO-COUPLER	TR,50-60%,200mW,DIP-4,ST	PC152,PC153	2
0604-000146	PHOTO-COUPLER	TRIAC,-,250mW,DIP-6,ST	PC151	1
0604-0001033	PHOTO- INTERRUPTER	TR,-,150mW,DIP-4,ST	OP1,OP2,OP3,OP4	4
0801-000528	IC-CMOS LOGIC	74HCT574,D FLIP-FLOP,DIP,20P,3	U4	1
0801-000722	IC-CMOS LOGIC	74HC245,TRANSCEIVER,DIP,20P,30	U6	1
0803-000679	IC-TTL	7406,BUFFER/DRIVER,DIP,14P,300	U205	1
0803-001097	IC-TTL	7407,BUFFER/DRIVER,DIP,14P,300	U203	1
0903-000219	IC-MICROCOMPUTER	88C4316,8BIT,DIP,64P,-,8MHz,ST	U3	1
1103-001045	IC-EEPROM	27E512,64Kx8BIT,DIP,28P,600MIL	U2	1
1201-000229	IC-OP AMP	324,DIP,14P,300MIL,QUAD,100V/m	U201	1
1202-000103	IC-VOLTAGE COMP.	393,DIP,8P,300MIL,DUAL,36V,CMO	U5	1
1203-000531	IC-SWITCH VOL. REG.	5311,DIP,8P,300MIL,PLASTIC,-,3	U101	1
1404-000167	THERMISTOR-NTC	5ohm,10%,3150K,18.7mW/C,TP	TH101	1
1405-000125	VARIATOR	220V,4500A,17x4.2mm,TP	TNR101	1
2001-000003	R-CARBON	330ohm,5%,1/8W,AA,TP,1.8x3.2mm	JP122	1
2001-000003	R-CARBON	330ohm,5%,1/8W,AA,TP,1.8x3.2mm	R25,R52,R111,R151	4
2001-000003	R-CARBON	330ohm,5%,1/8W,AA,TP,1.8x3.2mm	R406	1
2001-000005	R-CARBON	390ohm,5%,1/8W,AA,TP,1.8x3.2mm	R221,R231	2
2001-000010	R-CARBON	68KOHM,5%,1/8W,AA,TP,1.8X3.2MM	R240	1
2001-000012	R-CARBON	680KOHM,5%,1/8W,AA,TP,1.8X3.2MM	R236	1
2001-000015	R-CARBON(S)	0.5OHM,5%,1/2W,AA,TP,2.4X6.4MM	R62	1
2001-000016	R-CARBON(S)	1OHM,5%,1/2W,AA,TP,2.4X6.4MM	R8	1
2001-000019	R-CARBON(S)	10OHM,5%,1/2W,AA,TP,2.4X6.4MM	R217,R230	2
2001-000023	R-CARBON	47OHM,5%,1/4W,AA,TP,2.4X6.4MM	R109	1
2001-000027	R-CARBON	100OHM,5%,1/4W,AA,TP,2.4X6.4MM	R104	1
2001-000045	R-CARBON	1.8KOHM,5%,1/4W,AA,TP,2.4X6.4MM	R274	1
2001-000085	R-CARBON(S)	100KOHM,5%,1/2W,AA,TP,2.4X6.4MM	R106,R107	2
2001-000105	R-CARBON	1.5KOHM,5%,1/4W,AA,TP,2.4X6.4MM	R14	1
2001-000118	R-CARBON(S)	180OHM,5%,1/2W,AA,TP,2.4X6.4MM	R103	1
2001-000221	R-CARBON	1.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM	R39	1
2001-000273	R-CARBON	100KOHM,5%,1/8W,AA,TP,1.8X3.2MM	R238	1
2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	R15,R24,R29,R30,R31	5
2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	R155,R252,R282,R283	4
2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	R284,R285,R293,R422	4
2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	R514	1
2001-000294	R-CARBON	10MOHM,5%,1/4W,AA,TP,2.4X6.4MM	R205	1
2001-000319	R-CARBON	120KOHM,5%,1/8W,AA,TP,1.8X3.2MM	R215	1

2001-000331	R-CARBON	12KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R56, R63	2
2001-000362	R-CARBON	150OHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R16, R23, R64	3
2001-000362	R-CARBON	150OHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R512	1
2001-000429	R-CARBON	1KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R18, R33, R34	3
2001-000429	R-CARBON	1KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R408	1
2001-000429	R-CARBON	1KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R41, R42, R44, R45, R46	5
2001-000429	R-CARBON	1KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R49	1
2001-000435	R-CARBON	1MOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R502	1
2001-000449	R-CARBON	2.2KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R48, R225, R250, R256	4
2001-000449	R-CARBON	2.2KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R501, R504	2
2001-000515	R-CARBON	220OHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R27, R424, R425, R426	4
2001-000552	R-CARBON	270OHM, 5%, 1/4W, AA, TP, 2.4X6.4MM	R112	1
2001-000563	R-CARBON	27KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R253	1
2001-000565	R-CARBON	27OHM, 5%, 1/2W, AA, TP, 3.3X9MM	R517	1
2001-000577	R-CARBON	2KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R152	1
2001-000660	R-CARBON	33KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R249	1
2001-000660	R-CARBON	33KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R257, R263, R266	3
2001-000660	R-CARBON	33KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R500, R503, R507	3
2001-000734	R-CARBON	4.7KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R110	1
2001-000734	R-CARBON	4.7KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R251	1
2001-000761	R-CARBON	430OHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R218	1
2001-000780	R-CARBON	470OHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R156	1
2001-000786	R-CARBON	47KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R54, R223, R224, R227	4
2001-000812	R-CARBON	5.6KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R19, R26, R28, R35, R36	5
2001-000812	R-CARBON	5.6KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R261, R405	2
2001-000812	R-CARBON	5.6KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R38, R40, R51, R59	4
2001-000812	R-CARBON	5.6KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R60, R61, R260	3
2001-000816	R-CARBON	5.6OHM, 5%, 1/4W, AA, TP, 2.4X6.4MM	R113	1
2001-000832	R-CARBON	510OHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R20, R407	2
2001-000864	R-CARBON	56KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R53, R248	2
2001-001015	R-CARBON	9.1KOHM, 5%, 1/8W, AA, TP, 1.8X3.2MM	R262	1
2001-001070	R-CARBON(S)	120OHM, 5%, 1/2W, AA, TP, 2.4X6.4MM	R102	1
2001-001093	R-CARBON(S)	2.2KOHM, 5%, 1/2W, AA, TP, 2.4X6.4MM	R292	1
2001-001150	R-CARBON(S)	470KOHM, 5%, 1/2W, AA, TP, 2.4X6.4MM	R101, R105	2
2001-001165	R-CARBON(S)	56OHM, 5%, 1/2W, AA, TP, 2.4X6.4MM	R216, R219	2
2003-000703	R-METAL OXIDE(S)	470ohm, 5%, 3W, AA, TP, 6x16mm	R157, R158	2
2003-000706	R-METAL OXIDE(S)	47Kohm, 5%, 2W, AA, TP, 4.3x12mm	R108	1
2004-000002	R-METAL	78.7Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R247	1
2004-000003	R-METAL	16.2Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R237	1
2004-000345	R-METAL	15Kohm, 1%, 1/8W, AA, TP, 1.8x3.2mm	R17, R22, R55, R222	4
2004-000345	R-METAL	15Kohm, 1%, 1/8W, AA, TP, 1.8x3.2mm	R43	1
2004-000345	R-METAL	15Kohm, 1%, 1/8W, AA, TP, 1.8x3.2mm	R513	1
2004-000385	R-METAL	17.4Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R510, R268	2
2004-000433	R-METAL	1Kohm, 1%, 1/8W, AA, TP, 1.8x3.2mm	R58, R213	2
2004-000544	R-METAL	21.5Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R508	1
2004-000691	R-METAL	3.16Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R153	1
2004-000699	R-METAL	3.3Kohm, 1%, 1/8W, AA, TP, 1.8x3.2m	R516, R57	2
2004-000754	R-METAL	309Kohm, 1%, 1/8W, AA, TP, 1.8x3.2m	R511	1
2004-000869	R-METAL	3Kohm, 1%, 1/8W, AA, TP, 1.8x3.2mm	R154	1
2004-000884	R-METAL	4.3Kohm, 1%, 1/8W, AA, TP, 1.8x3.2m	R37	1
2004-000900	R-METAL	4.7Kohm, 1%, 1/8W, AA, TP, 1.8x3.2m	R47	1
2004-000965	R-METAL	470Kohm, 1%, 1/8W, AA, TP, 1.8x3.2m	R243	1
2004-001156	R-METAL	619Kohm, 1%, 1/8W, AA, TP, 1.8x3.2m	R509	1
2004-001231	R-METAL	75Kohm, 1%, 1/8W, AA, TP, 1.8x3.2mm	R269	1
2004-001231	R-METAL	75Kohm, 1%, 1/8W, AA, TP, 1.8x3.2mm	R506	1
2004-001315	R-METAL	86.6Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R234	1
2004-001315	R-METAL	86.6Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R505	1
2004-001357	R-METAL	93.1Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R233	1
2004-001357	R-METAL	93.1Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R515	1
2004-002001	R-METAL	12.1Kohm, 1%, 1/8W, AA, TP, 1.8x3.2	R245	1
2004-004179	R-METAL	174Kohm, 1%, 1/8W, AA, TP, 1.8x3.2mm	R258	1
2005-000164	R-WIRE WOUND, NON	0.1ohm, 5%, 2W, AA, BK, 4x12mm	R114	1
2009-001041	R-METAL GLAZE	2Mohm, 1%, 1/4W, AA, TP, 3X9mm	R208, R209	2
2009-001042	R-METAL GLAZE	4.7Mohm, 1%, 1/4W, AA, TP, 3x9mm	R204, R207, R277	3
2009-001082	R-METAL GLAZE	30Mohm, 2%, 2W, -, BK, 30x8.5mm	R280	1
2009-001083	R-METAL GLAZE	200Mohm, 2%, 1/2W, CM, BK, 18x6mm	R220	1
2009-001084	R-METAL GLAZE	30Mohm, 2%, 0.5W, CM, BK, 18x6mm	R211	1
2009-001085	R-METAL GLAZE	10Mohm, 3%, 1/2W, CM, BK, 18x4mm	R201	1
2103-000156	VR-SEMI	10Kohm, 10%, 1/2W, TOP	VR201, VR202, VR204	3
2103-000270	VR-SEMI	20Kohm, 10%, 1/2W, TOP	VR203	1
2103-001079	VR-SEMI	100Kohm, 15%, 1/2W, TOP	VR205	1

2201-000003	C-CERAMIC,DISC	68pF,10%,2KV,SL,TP,8x5,5	C203	1
2201-000004	C-CERAMIC,DISC	100pF,10%,2KV,SL,TP,8x5,5	C220	1
2201-000004	C-CERAMIC,DISC	100pF,10%,2KV,SL,TP,8x5,5	C404	1
2201-000017	C-CERAMIC,DISC	1nF,10%,50V,Y5P,TP,4x3.5,5	C17,C22,C27,C29	4
2201-000017	C-CERAMIC,DISC	1nF,10%,50V,Y5P,TP,4x3.5,5	C31,C38,C39,C40,C41	5
2201-000017	C-CERAMIC,DISC	1nF,10%,50V,Y5P,TP,4x3.5,5	C42,C43,C45,C237	4
2201-000019	C-CERAMIC,DISC	10nF,+80-20%,500V,Y5V,TP,13.5x	C106,C501	2
2201-000023	C-CERAMIC,DISC	2.2nF,20%,125V,Y5U,TP,11x7,5	C103,C104,C115	3
2201-000119	C-CERAMIC,DISC	100nF,+80-20%,50V,Y5V,TP,8x3.5	C209	1
2201-000119	C-CERAMIC,DISC	100nF,+80-20%,50V,Y5V,TP,8x3.5	C222,C226,C227,C229	4
2201-000119	C-CERAMIC,DISC	100nF,+80-20%,50V,Y5V,TP,8x3.5	C26,C32,C34,C37,C46	5
2201-000138	C-CERAMIC,DISC	100pF,10%,50V,Y5P,TP,4.0x4.0,2	C16,C28,C30,C402	4
2201-000326	C-CERAMIC,DISC	2.2nF,10%,50V,Y5P,TP,6.5x3,5	C221,C223,C225	3
2201-000326	C-CERAMIC,DISC	2.2nF,10%,50V,Y5P,TP,6.5x3,5	C230	1
2201-000326	C-CERAMIC,DISC	2.2nF,10%,50V,Y5P,TP,6.5x3,5	C500	1
2201-000391	C-CERAMIC,DISC	22pF,5%,50V,SL,TP,5.0x3.0,5	C20,C21	2
2201-000473	C-CERAMIC,DISC	33nF,+80-20%,50V,Y5V,TP,6x3,5	C207,C208,C210,C214	4
2201-000473	C-CERAMIC,DISC	33nF,+80-20%,50V,Y5V,TP,6x3,5	C224	1
2201-000645	C-CERAMIC,DISC	680pF,5%,50V,SL,TP,10*3,5	C111	1
2201-000724	C-CERAMIC,DISC	470pF,0.1,3KV,Y5P,TP,8x5,5	C201,C204,C219	3
2201-000724	C-CERAMIC,DISC	470pF,0.1,3KV,Y5P,TP,8x5,5	C202,C206	2
2201-002066	C-CERAMIC,DISC	470pF,10%,6KV,Y5P,TP,10x7,10	C211,C212,C215,C216	4
2201-002067	C-CERAMIC,DISC	100pF,10%,6KV,Y5P,TP,8x7,10	C213	1
2202-000002	C-CERAMIC,MLC-AXIAL	10nF,0.05,500V,X7R,TP,5.1x6.4x	C10,C12,C15,C18,C401	5
2202-000002	C-CERAMIC,MLC-AXIAL	10nF,0.05,500V,X7R,TP,5.1x6.4x	C502	1
2202-000654	C-CERAMIC,MLC-RADIAL	100nF,10%,50V,X7R,TP,5.1x6.6,5	C110,C112	2
2301-000490	C-FILM,PEF	4.7nF,5%,100V,TP,5.8x3.1x12.5,	C113,C505	2
2305-000002	C-FILM,MPEF	47nF,20%,275V,TP,18X12.5X5.5MM,15	C102	1
2306-000212	C-FILM,MPPF	470nF,20%,275V,BK,-.22.5	C101	1
2401-000183	C-AL	1000uF,20%,35V,WT,TP,12.5x25,5	C156,C157	2
2401-000207	C-AL	100uF,20%,50V,WT,TP,8x12,5	C228,C503,C504,C506	4
2401-002075	C-AL	4.7uF,20%,50V,GP,TP,5x11,5	C33,C35	2
2401-003203	C-AL	470uF,20%,200V,GP,BK,30X25,10m	C107	1
2801-000002	CRYSTAL-UNIT	6.94407MHz,50ppm,28-AAM,20pF,5	X1	1
2902-001011	FILTER-LINE	-,-,-,-	BD1,BD101,BD102	3
2902-001011	FILTER-LINE	-,-,-,-	BD103,BD151,BD152	3
3301-000344	CORE-FERRITE BEAD	ZZ,3.5x6.5mm,-,-	FB1,FB2,FB3,FB4,FB5	5
3601-000151	FUSE-FERRULE	125V,5A,FA,GLASS,5X20MM	F151	1
3601-000157	FUSE-FERRULE	125V,8A,SB,GLASS,5X20MM	F101	1
3602-000001	FUSE-CLIP	-,-,-,30mohm	FH1,FH2,FH3,FH4	4
3704-000235	SOCKET-IC	28P,DIP,SN,2.54mm	U2	1
3711-000164	CONNECTOR-HEADER	1WALL,2P,1R,2.5mm,STRAIGHT,SN	CN4	1
3711-000217	CONNECTOR-HEADER	1WALL,3P,1R,3.96mm,STRAIGHT,SN	CN101	1
3711-000236	CONNECTOR-HEADER	1WALL,4P,1R,3.96mm,STRAIGHT,SN	CN12	1
3711-000633	CONNECTOR-HEADER	BOX,11P,1R,2mm,STRAIGHT,SN	CN3	1
3711-000782	CONNECTOR-HEADER	BOX,2P,1R,2.0mm,STRAIGHT,SN	CN105	1
3711-000865	CONNECTOR-HEADER	BOX,3P,1R,2mm,STRAIGHT,SN	CN103	1
3711-001108	CONNECTOR-HEADER	BOX,8P,1R,2mm,STRAIGHT,SN	CN6	1
3711-002410	CONNECTOR-HEADER	BOX,10P,2R,2mm,STRAIGHT,SN	CN104	1
3711-002653	CONNECTOR-HEADER	BOX,3P,1R,2.5mm,STRAIGHT,SN	CN7	1
3711-003204	CONNECTOR-HEADER	BOX,24P,2R,2mm,STRAIGHT,SN	CN5	1
3711-003205	CONNECTOR-HEADER	BOX,4P,1R,2.0mm,STRAIGHT,SN	CN2	1
3711-003969	CONNECTOR-HEADER	BOX,2P,1R,2.5mm,STRAIGHT,SN	CN8,CN10	2
JC26-20301B	TRANS AF-	ML-80,-,95MH	T201,T202,T204	3
JC26-20301C	TRANS AF-	ML-80,-,0.4WIRE	T101	1
JC26-30506A	TRANS POWER-THV	ML-7000,-,57.5/1.3uH,180mH	T203	1
JC27-40502A	COIL CHOCK-68UH	ML5500,68uH,0.04ohm,32T	L103	1
JC27-60101B	COIL FILTER-	-,9UH,-,-	L152	1
JC27-60101C	COIL FILTER-	-,6UH,-,-	L151	1
JC27-60502A	COIL FILTER-LINE110V	ML5500,7.0mH,0.10ohm,26T	L101	1
JC27-60503A	COIL FILTER-3MH	ML5500,3.0mH,0.40ohm,30T	L102	1
JC33-10501B	SOLENOID-6000	ML-6000,24VDC,72W,57,39X39X22,		1
JC39-40511A	CBF HARNESS-	ML-80,JUMPER,AWG22,52mm,SILVER	JP104,JP105,JP106,JP107,JP108,JP109	6
JC39-40511A	CBF HARNESS-	ML-80,JUMPER,AWG22,52mm,SILVER	JP110,JP111,JP112,JP113,JP114,JP115	6
JC39-40511A	CBF HARNESS-	ML-80,JUMPER,AWG22,52mm,SILVER	JP116,JP117,JP118,JP119,JP120	5
JC39-40511A	CBF HARNESS-	ML-80,JUMPER,AWG22,52mm,SILVER	JP121,JP123,JP124,JP125,JP126	5
JC39-40511A	CBF HARNESS-	ML-80,JUMPER,AWG22,52mm,SILVER	JP127,JP128,JP129,JP130,JP131,JP132	6
JC39-40511A	CBF HARNESS-	ML-80,JUMPER,AWG22,52mm,SILVER	JP133,JP134,JP135,JP136,JP137,JP138	6
JC39-40511A	CBF HARNESS-	ML-80,JUMPER,AWG22,52mm,SILVER	JP139,JP140,JP141,JP142,JP143	6
JC39-40511A	CBF HARNESS-	ML-80,JUMPER,AWG22,52mm,SILVER	JP144,JP145,JP146,JP147,JP148	5
JC39-40511A	CBF HARNESS-	ML-80,JUMPER,AWG22,52mm,SILVER	JP149,JP150,JP151,JP152,JP153,JP154	6

JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP155, JP156, JP157, JP158, JP159, JP160	6
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP16, JP17, JP21, JP22, JP23	5
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP161, JP162, JP163, JP164, JP165, JP166	6
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP167, JP168, JP169, JP170, JP171, JP172	6
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP173, JP174, JP175, JP176, JP177	5
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP178, JP179, JP180, JP181, JP182	5
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP188, JP189, JP190, JP191, JP192	5
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP193, JP194, JP195, JP196, JP197, JP198	6
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP199, JP200, JP203, JP187, JP268	5
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP204, JP205, JP206, JP208	4
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP209, JP210, JP211, JP212, JP213, JP214	6
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP217, JP218, JP219, JP220, JP221, JP222	6
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP223, JP224, JP225, JP226, JP227, JP228	6
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP229, JP230, JP231, JP232, JP233, JP234	6
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP25, JP26, JP27, JP28, JP29, JP30, JP31, JP216	8
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP272, JP273, JP274, JP275, JP197, JP601	6
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP33, JP34, JP35, JP36, JP37, JP38, JP39	7
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP40, JP41, JP42, JP43, JP44, JP45, JP46, JP47	8
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP49, JP50, JP51, JP52	4
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP55, JP56, JP57, JP58, JP59, JP60, JP62, JP63	8
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP602, JP605, JP616, JP7	4
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP617, R412	2
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP65, JP66, JP67, JP68, JP69, JP70, JP71, JP72	8
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP73, JP74, JP75, JP76, JP77, JP78, JP79, JP80	8
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP8, JP10, JP11, JP13	4
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP81, JP82, JP83, JP84, JP85, JP86, JP87, JP88	8
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP89, JP90, JP91, JP92, JP93, JP94, JP95, JP96	8
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JP97, JP98, JP99, JP100, JP101, JP102, JP103	7
JC39-40511A	CBF HARNESS-	ML-80, JUMPER, AWG22, 52mm, SILVER	JS3, JS4, JS5, JP4, JP5, JP6	6
JC41-10529A	PCB-ENGINE	ML-5500, FR-1, 1L, T1.6, 247X299mm		1
JC70-10909A	IPR-CONNECTOR HV	ML-80, AL, TO.8, -	HP1, HP2, HP3, HP4	4
JC96-00320A	ELA HOU-H/SINK	ML-80(SEAU), -, EUROPE, -, -, -, -		1
0402-000304	DIODE-RECTIFIER	STPR1020CF, 200V, 5A, TO-220, ST	D153	1
0402-000314	DIODE-RECTIFIER	D10SC4M, 40V, 10A, IT0-220	D152	1
0502-001124	TR-POWER	KSD526, NPN, 30W, TO-220, BK, 120-2	Q201, Q203	2
0505-000134	FET-SILICON	IRF840, N, 500V, 8A, 0.850HM, 125W, TO-220AB	Q102	1
1401-000108	THYRISTOR-TRIAC	100A, 600V, -, 5V//US, TO-220AB	Q101	1
6003-000008	SCREW-TAPTITE	BH, +, S, M3, L4, ZPC3, SWRCH18A	Q201, Q101	2
6003-000119	SCREW-TAPTITE	BH, +, B, M3, L8, CBLACK, SWRCH18A	D152, D153, Q203	3
JC61-70100A	SPRING-PS	ML-66G, STS304-W1/2H, TO.5, -, -, -	FOR SMPS H/SINK	1
JC62-20001A	TUBE-IRF840	SSP5N90, IRF840, -, TO.45, L23, -	Q102	1
JC62-30001A	HEAT SINK-TRANS	ML-80, AL, -	Q102, D152, D153	1
JC62-30002A	HEAT SINK-SMPS	ML-80, AL, -	Q203	1
JF62-30201A	HEAT SINK	HVPS, SPCC, t1.0	Q101, Q201	2
JF68-30527H	LABEL(R)-BAR CODE	SF1000, PY, 38X6.5, TO.1, WHT		1
JF68-30527N	LABEL(R)-BAR CODE	SF500, PY, 20X10, TO.1, WHT		1

07-5. Network Card Parts List

Lev	SEC Code	Location NO.	Q'ty	Description/Specification	A/S
1	6001-000131	-	2	SCREW-MACHINE	"BH,+,M3,L6,ZPC(YEL),SM20C,-"
1	JC69-00045A	-	0.2	"BOX-MASTER NET,NEC"	"NEC,ML-7000,SW-1,284*210*190,-"
1	JC69-30906A	-	1	BAG-NETWORK	"SHIELDING,T1,250*160,ML-7000"
1	JC70-00021A	-	1	CAP-BRKT NET OPT	"ML-7000,SPCC,T0.8,-"
1	JC92-01119A	PBA ASSY	1	PBA SUB-NPC(NEC)	"ML-7000N3/NEC,NEC,USA,100BASE NETWORK CARD,-,-,"
2	0601-000105	LED1	1	LED	"CBI-ANGLE,GRN,5mm,560nm"
2	0601-000105	LED2	1	LED	"CBI-ANGLE,GRN,5mm,560nm"
2	0801-001072	U20	1	IC-CMOS LOGIC	"74ACT32,OR GATE,SOP,14P,150MIL"
2	0903-001118	U26	1	IC-MICROCONTROLLER	"32C5000,32BIT,QFP,208P,-,33MHz"
2	1103-001061	U15	1	IC-EEPROM	"24C32,4Kx8BIT,SOP,8P,150MIL,10"
2	1105-001252	U18	1	IC-DRAM	"416C4100,4MX16BIT,TSOP,50P,400MIL,45NS,5V,10%,PLASTIC,0TO+70C,"
2	1106-001275	U24	1	IC-SRAM	"68257,32KX8BIT,TSOP,28P,300MIL,15NS,5V,10%,PLASTIC,0TO+70C,2MA"
2	1106-001275	U25	1	IC-SRAM	"68257,32KX8BIT,TSOP,28P,300MIL,15NS,5V,10%,PLASTIC,0TO+70C,2MA"
2	1107-001046	U19	1	IC-FLASH MEMORY	"29F800,512Kx16BIT,TSOP,48P,724"
2	1205-001675	U165	1	IC-TRANSCEIVER	"ICS1892Y,MQFP,64P,551MIL,PLASTIC,5V,-,-,5TO+85C,TR,-"
2	2007-000023	R79	1	R-CHIP	"120OHM,5%,1/10W,DA,TP,2012"
2	2007-000023	R80	1	R-CHIP	"120OHM,5%,1/10W,DA,TP,2012"
2	2007-000026	R68	1	R-CHIP	"200OHM,5%,1/10W,DA,TP,2012"
2	2007-000026	R69	1	R-CHIP	"200OHM,5%,1/10W,DA,TP,2012"
2	2007-000026	R70	1	R-CHIP	"200OHM,5%,1/10W,DA,TP,2012"
2	2007-000026	R71	1	R-CHIP	"200OHM,5%,1/10W,DA,TP,2012"
2	2007-000029	L1	1	R-CHIP	"0OHM,5%,1/10W,DA,TP,2012"
2	2007-000029	L2	1	R-CHIP	"0OHM,5%,1/10W,DA,TP,2012"
2	2007-000029	R30	1	R-CHIP	"0OHM,5%,1/10W,DA,TP,2012"
2	2007-000029	R72	1	R-CHIP	"0OHM,5%,1/10W,DA,TP,2012"
2	2007-000029	R73	1	R-CHIP	"0OHM,5%,1/10W,DA,TP,2012"
2	2007-000029	R97	1	R-CHIP	"0OHM,5%,1/10W,DA,TP,2012"
2	2007-000029	R98	1	R-CHIP	"0OHM,5%,1/10W,DA,TP,2012"
2	2007-000238	R148	1	R-CHIP	"1.5KOHM,1%,1/10W,DA,TP,2012"
2	2007-000297	R118	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R119	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R120	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R121	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R124	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R126	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R127	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R128	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R129	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R147	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R150	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R92	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R94	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R95	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000297	R96	1	R-CHIP	"10Kohm,1%,1/10W,DA,TP,2012"
2	2007-000449	R105	1	R-CHIP	"180OHM,5%,1/10W,DA,TP,2012"
2	2007-000468	R74	1	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"
2	2007-000468	R75	1	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"
2	2007-000468	R76	1	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"
2	2007-000468	R78	1	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"
2	2007-000468	R87	1	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"
2	2007-000468	R88	1	R-CHIP	"1KOHM,5%,1/10W,DA,TP,2012"
2	2007-000511	R111	1	R-CHIP	"2.4KOHM,5%,1/10W,DA,TP,2012"
2	2007-000766	R125	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000766	R146	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000766	R89	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000766	R90	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000766	R91	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000781	R104	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000781	R123	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000781	R138	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000781	R144	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000781	R145	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000781	R149	1	R-CHIP	"330OHM,5%,1/10W,DA,TP,2012"
2	2007-000953	R108	1	R-CHIP	"49.9OHM,1%,1/10W,DA,TP,2012"
2	2007-000953	R109	1	R-CHIP	"49.9OHM,1%,1/10W,DA,TP,2012"
2	2007-001067	R110	1	R-CHIP	"6.8KOHM,1%,1/10W,DA,TP,2012"
2	2007-001092	R106	1	R-CHIP	"620OHM,5%,1/10W,DA,TP,2012"
2	2007-001092	R107	1	R-CHIP	"620OHM,5%,1/10W,DA,TP,2012"
2	2007-001133	R103	1	R-CHIP	"680OHM,5%,1/10W,DA,TP,2012"
2	2007-001133	R113	1	R-CHIP	"680OHM,5%,1/10W,DA,TP,2012"
2	2007-002826	R112	1	R-CHIP	"110OHM,1%,1/10W,DA,TP,2012"
2	2011-001094	RA1	1	R-NETWORK	"39ohm,5%,1/16W,L,CHIP,8P,TP"
2	2011-001094	RA10	1	R-NETWORK	"39ohm,5%,1/16W,L,CHIP,8P,TP"
2	2203-000192	C100	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C101	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C102	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"

Network Card Parts List

Network Card Parts List

Lev	SEC Code	Location NO.	Q'ty	Description/Specification	Svc.
2	2203-000192	C103	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C104	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C105	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C106	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C107	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C108	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C109	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C110	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C127	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C128	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C129	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C130	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C131	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C132	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C133	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C134	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C135	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C136	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C137	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C138	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C139	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C140	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C141	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C142	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C143	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C144	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C145	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C146	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C147	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C148	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C149	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C150	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C151	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C152	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C153	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C154	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C158	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C159	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C160	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C161	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C162	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C163	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C169	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C170	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C88	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C90	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C94	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C95	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C96	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000192	C97	1	"C-CERAMIC,CHIP"	"100nF,+80-20%,50V,Y5V,TP,2012,"
2	2203-000316	C185	1	"C-CERAMIC,CHIP"	"120pF,5%,50V,NPO,TP,2012,-"
2	2203-001002	C182	1	"C-CERAMIC,CHIP"	".047NF,5%,50V,NPO,TP,2012"
2	2203-001002	C183	1	"C-CERAMIC,CHIP"	".047NF,5%,50V,NPO,TP,2012"
2	2203-001002	C184	1	"C-CERAMIC,CHIP"	".047NF,5%,50V,NPO,TP,2012"
2	2404-000128	C186	1	"C-TA,CHIP"	"10uF,20%,16V,-,TP,6032,-"
2	2404-000128	C91	1	"C-TA,CHIP"	"10uF,20%,16V,-,TP,6032,-"
2	2404-000128	C92	1	"C-TA,CHIP"	"10uF,20%,16V,-,TP,6032,-"
2	2804-001056	Y1	1	OSCILLATOR-CLOCK	"33MHz,100ppm,10TTL,-,5V,30mA"
2	2804-001311	Y2	1	OSCILLATOR-CLOCK	"25MHZ,50PPM,CMOS,ST,5V,30MA"
2	3301-000344	BD2	1	CORE-FERRITE BEAD	"ZZ,3.5x6.5mm,-,-"
2	3702-001102	J1	1	CONNECTOR-RIBBON	"60P,FEMALE,STRAIGHT,AU"
2	3711-003205	CN6	1	CONNECTOR-HEADER	"BOX,4P,1R,2.0mm,STRAIGHT,SN"
2	3722-001319	CN5	1	JACK-MODULAR	"8P/8C,-,AU30U,BLK,NO"
2	JC13-00004A	U22	1	IC-ASIC-NPC	"ML-7000N3,NETBRIDGE,TQFP,160,945MIL"
2	JC41-00011A	PCB	1	PCB—NPC2	"ML-7000N3,FR-4,4 LAYER,1.6T,1.6T*124*80"
1	JK68-10100A	-	1	LABEL(P)-BLANK	"ER-4615(SESAB),ART,W70*L30,120"

Electrical Parts List

07-Electrical Parts List

07-1 Controller Board

Lev	SEC Code	Location NO.	Q'ty	Description/Specification	Svc.
1	0407-000101	"D2,D3"	2	DIODE-ARRAY "DA204K,20V,100mA,C2-3,SOT-23,T"	N
1	0801-001072	"U3,U5,U12"	3	IC-CMOS LOGIC "74ACT32,OR GATE,SOP,14P,150MIL"	N
1	0803-000117	"U15,U28"	2	IC-TTL "74F14,INVERTER,SOP,14P,150MIL,"	N
1	0803-000207	U4	1	IC-TTL "74F08,AND GATE,SOP,14P,150MIL,"	N
1	0803-000270	U9	1	IC-TTL "74F04,INVERTER,SOP,14P,150MIL,"	N
1	0803-000303	U19	1	IC-TTL "74F74,D FLIP-FLOP,SOP,14P,150M"	N
1	0803-000468	U23	1	IC-TTL "74LS273,D FLIP-FLOP,SOP,20P,30"	N
1	0803-001381	U16	1	IC-TTL "74F273,D FLIP-FLOP,SOP,20P,300"	N
1	0803-003058	U21	1	IC-TTL "74F1071,ESD,SOP,20P,-,-,TP,PLA"	N
1	0904-001319	U7	1	IC-USC "USB9602-28M,8BIT,SOP,28P,300MIL,48MHZ,ST,3.3V,-,0TO+70C"	N
1	1006-000243	U17	1	IC-LINE TRANSCEIVER "74ACT245,SOP,20P,-,OCTAL,ST,PL"	Y
1	1103-000133	U26	1	IC-EEPROM "93C66,256x16BIT,SOP,8P,150MIL,"	Y
1	1105-001213	"U1,U2"	2	IC-DRAM "416C1204,1Mx16BIT,SOJ,42P,400M"	Y
1	1107-001121	"U8,U11"	2	IC-FLASH MEMORY "29F800,512Kx16BIT,TSOP,48P,720"	Y
1	1203-000346	U20	1	IC-VOL. SUPERVISORY "7705,SOP,8P,150MIL,PLASTIC,20V"	Y
1	1203-001026	"U25,U27"	2	IC-POSI.FIXED REG. "33269,DPAK,3P,265MIL,3.37/3.33V40TO+150C,800MA,-,ST"	Y
1	2007-000028	R201	1	R-CHIP "390OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000029	"R21,R27,R58,R70,R71"	5	R-CHIP "00OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000029	"R7,R17,R20"	3	R-CHIP "00OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000029	"R75,R77,R82,R199"	4	R-CHIP "00OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000241	R52	1	R-CHIP "1.5KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000290	"R101,R29"	2	R-CHIP "100OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000290	"R33,R36,R38,R39,R79,R98"	6	R-CHIP "100OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R113,R114,R123,R133,R134,R135"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R136,R137,R139,R140,R141,R142"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R143,R144,R145,R146,R147,R148"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R150,R151,R152,R153,R155,R157"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R166,R168,R169,R170,R171,R172"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R173,R175,R177,R182"	4	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	R190	1	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R191,R192,R193,R194,R195,R198"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R37,R40,R42,R65,R66,R45"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R46,R47,R49,R67,R181,R53"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R60,R69,R106,R72,R76,R78"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R8,R18,R23,R34,R64,R35"	6	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R80,R84,R91,R93,R94"	5	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000300	"R95,R96,R97,R100,R103"	5	R-CHIP "10KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000308	"R54,R63,R68,R89,R154,R9"	6	R-CHIP "10OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000312	R167	1	R-CHIP "10OHM,5%,1/8W,DA,TP,3216"	Y
1	2007-000449	R90	1	R-CHIP "180OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000468	"R110,R117,R118,R119,R120,R121"	6	R-CHIP "1KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000468	"R161,R163,R165,R179,R180"	5	R-CHIP "1KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000468	"R24,R81,R87,R107,R108,R109"	6	R-CHIP "1KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000468	"R28,R48,R86"	3	R-CHIP "1KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000477	R200	1	R-CHIP "1MOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000493	R85	1	R-CHIP "2.2KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000551	"R31,R51"	2	R-CHIP "20OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000671	R11	1	R-CHIP "2KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000686	"R122,R132"	2	R-CHIP "3.3KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000781	"R1,R2,R55,R56,R57,R62"	6	R-CHIP "33OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000781	"R124,R127,R130,R131,R149,R156"	6	R-CHIP "33OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000781	"R158,R160,R162,R164,R174,R176"	6	R-CHIP "33OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000781	"R178,R61"	2	R-CHIP "33OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000781	"R83,R92,R99,R104"	4	R-CHIP "33OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000931	"R16,R116"	2	R-CHIP "470OHM,5%,1/8W,DA,TP,2012"	Y
1	2007-000964	"R125,R126,R128,R129,R138,R159"	6	R-CHIP "5.1KOHM,5%,1/8W,DA,TP,2012"	Y
1	2007-001133	"R74,R112"	2	R-CHIP "68OHM,5%,1/8W,DA,TP,2012"	Y
1	2011-001093	"RA11,RA12,RA13,RA22,RA23,RA31"	6	R-NETWORK "100OHM,5%,1/16W,L,CHIP,8P,TP"	Y
1	2011-001094	"RA1,RA2,RA3,RA4,RA5,RA6"	6	R-NETWORK "39ohm,5%,1/16W,L,CHIP,8P,TP"	Y
1	2011-001094	"RA16,RA17,RA18,RA19,RA20,RA21"	6	R-NETWORK "39ohm,5%,1/16W,L,CHIP,8P,TP"	Y
1	2011-001094	"RA24,RA25,RA26,RA27,RA28,RA29"	6	R-NETWORK "39ohm,5%,1/16W,L,CHIP,8P,TP"	Y
1	2011-001094	"RA30,RA32"	2	R-NETWORK "39ohm,5%,1/16W,L,CHIP,8P,TP"	Y
1	2011-001094	"RA7,RA8,RA9,RA10,RA14,RA15"	6	R-NETWORK "39ohm,5%,1/16W,L,CHIP,8P,TP"	Y
1	2203-000192	"C106,C107,C113,C114,C125"	5	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C11,C12,C13,C14,C31,C32"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C136,C137,C138,C139,C140,C141"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C147,C148,C149,C150,C159,C160"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C161,C162,C163,C164,C172,C173"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C174,C175,C176,C177,C178,C179"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C185,C187,C188,C189,C190,C191"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C192,C194,C213,C214,C215,C217"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C2,C3,C7,C8,C9,C10"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C218,C219,C209"	3	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y

Electrical Parts List

Controller Board

Lev	SEC Code	Location NO.	Q'ty	Description/Specification	Svc.
1	2203-000192	"C220,C127,C132,C133,C134,C135"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C34,C35,C36,C37,C38,C42"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C43,C44,C45,C46,C47,C49"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C50,C52,C59,C60,C61,C65"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C66,C70,C75,C80,C81,C85"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C86,C89,C90,C91,C93,C94"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000192	"C97,C100,C102,C103,C104,C105"	6	"C-CERAMIC,CHIP" "100nF,+80-20%,50V,Y5V,TP,2012,"	Y
1	2203-000239	"C122,C123,C124,C167,C168"	5	"C-CERAMIC,CHIP" ".1NF,5%,50V,NPO,TP,2012"	Y
1	2203-000239	"C15,C16,C18,C25,C26,C27"	6	"C-CERAMIC,CHIP" ".1NF,5%,50V,NPO,TP,2012"	Y
1	2203-000239	"C21,C28,C39,C41,C48,C53"	6	"C-CERAMIC,CHIP" ".1NF,5%,50V,NPO,TP,2012"	Y
1	2203-000239	"C54,C64,C72,C88,C121,C131"	6	"C-CERAMIC,CHIP" ".1NF,5%,50V,NPO,TP,2012"	Y
1	2203-000274	"C210,C211,C212"	3	"C-CERAMIC,CHIP" "10pF,0.25pF,50V,NPO,TP,2012,2."	Y
1	2203-000274	"C55,C56,C57,C58"	4	"C-CERAMIC,CHIP" "10pF,0.25pF,50V,NPO,TP,2012,2."	Y
1	2203-000274	"C67,C68,C69,C87,C118"	5	"C-CERAMIC,CHIP" "10pF,0.25pF,50V,NPO,TP,2012,2."	Y
1	2203-000316	C95	1	"C-CERAMIC,CHIP" "120pF,5%,50V,NPO,TP,2012,-"	Y
1	2203-000361	"C84,C29,C221"	3	"C-CERAMIC,CHIP" "150pF,5%,50V,NPO,TP,2012,-"	Y
1	2203-000455	"C195,C196,C197,C198,C199,C200"	6	"C-CERAMIC,CHIP" "1nF,5%,50V,NPO,TP,2012,-"	Y
1	2203-000455	C201	1	"C-CERAMIC,CHIP" "1nF,5%,50V,NPO,TP,2012,-"	Y
1	2203-000455	"C92,C101,C108,C152,C154,C156"	6	"C-CERAMIC,CHIP" "1nF,5%,50V,NPO,TP,2012,-"	Y
1	2203-000595	"C128,C129,C130,C142,C143,C144"	6	"C-CERAMIC,CHIP" ".22NF,5%,50V,NPO,TP,2012"	Y
1	2203-000595	"C145,C146"	2	"C-CERAMIC,CHIP" ".22NF,5%,50V,NPO,TP,2012"	Y
1	2203-000634	"C17,C71,C96,C111,C112,C119"	6	"C-CERAMIC,CHIP" "22pF,5%,50V,NPO,TP,2012,-"	N
1	2203-000634	"C20,C4"	2	"C-CERAMIC,CHIP" "22pF,5%,50V,NPO,TP,2012,-"	N
1	2203-000818	"C30,C63,C73,C74,C76,C77"	6	"C-CERAMIC,CHIP" ".033NF,5%,50V,NPO,TP,2012"	Y
1	2203-000818	"C78,C79,C99,C109,C110,C216"	6	"C-CERAMIC,CHIP" ".033NF,5%,50V,NPO,TP,2012"	Y
1	2203-000938	"C151,C153,C155,C158,C165,C166"	6	"C-CERAMIC,CHIP" ".47NF,5%,50V,NPO,TP,2012"	Y
1	2203-000938	"C169,C170,C181,C182,C183,C184"	6	"C-CERAMIC,CHIP" ".47NF,5%,50V,NPO,TP,2012"	Y
1	2203-001002	C40	1	"C-CERAMIC,CHIP" ".047NF,5%,50V,NPO,TP,2012"	Y
1	2203-001158	C83	1	"C-CERAMIC,CHIP" ".068NF,5%,50V,NPO,TP,2012"	Y
1	2404-000128	"C62,C82,C186,C19"	4	"C-TA,CHIP" "10uF,20%,16V,-,TP,6032,-"	Y
1	2404-000308	"C1,C5,C24,C120,C126,C157"	6	"C-TA,CHIP" "33uF,20%,10V,-,TP,7342,4.4mm"	Y
1	2404-000308	"C180,C193"	2	"C-TA,CHIP" "33uF,20%,10V,-,TP,7342,4.4mm"	Y
1	2801-003699	Y1	1	CRYSTAL-UNIT "48MHz,50ppm,28-ABM,12pF,80ohm,"	Y
1	2804-000378	Y2	1	OSCILLATOR-CLOCK "40MHz,100ppm,10 TTL,-,5V,30mA"	Y
1	2804-001230	Y3	1	OSCILLATOR-CLOCK "47.7789MHz,50ppm,10TTL & CMOS,"	Y
1	2901-000229	"LF2,LF3,LF4,LF5,LF7,LF8"	6	FILTER-EMI SMD "50V,300mA,-,22nF,4.5x1.8x3.2mm"	N
1	2901-000229	"LF9,LF10,LF11,LF12,LF14,LF15"	6	FILTER-EMI SMD "50V,300mA,-,22nF,4.5x1.8x3.2mm"	N
1	2901-000235	LF13	1	FILTER-EMI SMD "50V,300mA,-,150pF,4.5x1.8x3.2,"	Y
1	3301-000271	B14	1	CORE-FERRITE BEAD "-,-,-,"	Y
1	3301-001034	R88	1	CORE-FERRITE BEAD "AB,2.0x1.25x0.9mm,-,-"	Y
1	3301-001074	"B1,B2,B6,B7,B8,B9"	6	CORE-FERRITE BEAD "AB,2.0x1.25x0.9mm,-,-"	Y
1	3301-001074	"B10,B11,B12,B13,R73"	5	CORE-FERRITE BEAD "AB,2.0x1.25x0.9mm,-,-"	Y
1	3702-000118	J11	1	CONNECTOR-RIBBON "36P,FEMALE,ANGLE,AU"	Y
1	3702-001104	J10	1	CONNECTOR-RIBBON "30P,FEMALE,STRAIGHT,AU"	Y
1	3702-001121	J4	1	CONNECTOR-RIBBON "60P,MALE,STRAIGHT,AUF"	Y
1	3709-000177	"J2,J3"	2	CONNECTOR-CARD EDGE "72P,1.27mm,ANGLE,SN"	Y
1	3711-001091	J12	1	CONNECTOR-HEADER "BOX,7P,1R,2.5mm,STRAIGHT,SN"	Y
1	3711-003204	J7	1	CONNECTOR-HEADER "BOX,24P,2R,2mm,STRAIGHT,SN"	Y
1	3711-003205	J6	1	CONNECTOR-HEADER "BOX,4P,1R,2.0mm,STRAIGHT,SN"	Y
1	3722-001101	CN2	1	JACK-USB "4P/2C,8.38mm,AU,IVR,#22-28"	Y
1	4701-001020	"U14,U6"	2	FREQ-ATTENUATOR "5-80MHz,15dB,-,0.03W"	Y
1	JC09-00001A	U18	1	IC MICRO COMPUTER-CPU "ML-6100,IBM25EMPPC603EPG-,32X32MM"	Y
1	JC11-10507A	U22	1	IC MASK ROM-HIGH "ML-165,KM23C8105DG,SOP,44P,600"	Y
1	JC11-10510A	U13	1	"IC MASK ROM-PCL6,LOW" "ml-165,KM23C8105DG,SOP,44P,600"	Y
1	JC13-00002A	U32	1	IC-ASIC-SPGP1 "ML-7000,SPGP1,QFP,240P,34.6X4.15BSC"	N
1	JC41-00005A	ML-6100 CONT(SPGP)	1	PCB—CONTRLLER(NETWORK) "ML-6100N,FR4,-,1.6T,-"	N
1	JC61-70938A	U32	1	SPRING-CLIP "ML-6000,SUS304CSP,0.6*3.5,-,44"	Y
1	JC62-30905A	U32	1	HEAT SINK-CPU "ML-6000,AL6063,-"	Y

Electrical Parts List

07-2 Engine Board(SEUK)

Lev	SEC Code	Location NO.	Q'ty	Description/Specification	Svc.
1	0201-000008	-	0	ADHESIVE-HM "PP_#3748,WHT,6500CPS,-"	N
1	0401-000005	"D154,D209"	2	DIODE-SWITCHING "1N4148,100V,200MA,DO-35,TP"	N
1	0401-000005	"D215,D220"	2	DIODE-SWITCHING "1N4148,100V,200MA,DO-35,TP"	N
1	0401-000005	"D221,D222,D223,D224"	4	DIODE-SWITCHING "1N4148,100V,200MA,DO-35,TP"	N
1	0401-000005	"D225,D226,D227,D228"	4	DIODE-SWITCHING "1N4148,100V,200MA,DO-35,TP"	N
1	0401-000005	"D229,D230,D231,D232"	4	DIODE-SWITCHING "1N4148,100V,200MA,DO-35,TP"	N
1	0401-000005	"D233,D401"	2	DIODE-SWITCHING "1N4148,100V,200MA,DO-35,TP"	N
1	0401-000005	"D4,D5,D6,D7,D101"	5	DIODE-SWITCHING "1N4148,100V,200MA,DO-35,TP"	N
1	0401-000005	"D500,D501,D502"	3	DIODE-SWITCHING "1N4148,100V,200MA,DO-35,TP"	N
1	0401-000005	"D504,D505"	2	DIODE-SWITCHING "1N4148,100V,200MA,DO-35,TP"	N
1	0402-000012	D102	1	DIODE-RECTIFIER "UF4007,1KV,1A,DO-41,TP"	N
1	0402-000104	DB101	1	DIODE-BRIDGE "D3SBA60,600V,4A,-,ST"	N
1	0402-000129	"D1,D216,D217"	3	DIODE-RECTIFIER "1N4003,200V,1A,DO-41,TP"	N
1	0402-000129	D503	1	DIODE-RECTIFIER "1N4003,200V,1A,DO-41,TP"	N
1	0402-000351	D103	1	DIODE-RECTIFIER "1N4937,600V,1A,DO-41,TP"	N
1	0402-000468	"D205,D206,D207,D208"	4	DIODE-RECTIFIER "ESJS58-06,6KV,2mA,DO-201"	N
1	0402-001193	"D201,D202,D203,D204"	4	DIODE-RECTIFIER "SHV-04,4KV,20mA,-,TP"	N
1	0402-001193	D210	1	DIODE-RECTIFIER "SHV-04,4KV,20mA,-,TP"	N
1	0403-000227	ZD102	1	DIODE-ZENER "1N751A,5.1V,5%,500mW,DO-35,TP"	N
1	0403-000338	ZD103	1	DIODE-ZENER "UZ27BM,27V,25.7-28.0V,500mW,DO"	N
1	0403-000346	"ZD152,ZD204,ZD205"	3	DIODE-ZENER "UZ33B,33V,30-36V,500mW,DO-35,T"	N
1	0403-000356	"ZD151,ZD201"	2	DIODE-ZENER "UZ5.6BCB,5.6V,5.46-5.7V,500mW,"	N
1	0403-000475	"ZD101,ZD203"	2	DIODE-ZENER "1N5274B,130V,5%,500mW,DO-35,TP"	N
1	0403-000554	ZD202	1	DIODE-ZENER "UZ7.5BM,7.2-7.7V,500mW,DO-35,T"	N
1	0501-000010	Q211	1	TR-SMALL SIGNAL "KSC1008,NPN,800mW,TO-92,TP,120"	N
1	0501-000010	"Q3,Q4,Q8,Q10,Q208"	5	TR-SMALL SIGNAL "KSC1008,NPN,800mW,TO-92,TP,120"	N
1	0501-000010	"Q500,Q503"	2	TR-SMALL SIGNAL "KSC1008,NPN,800mW,TO-92,TP,120"	N
1	0501-000294	"Q207,Q209"	2	TR-SMALL SIGNAL "KSA708-Y,PNP,800mW,TO-92,TP,12"	N
1	0501-000294	"Q501,Q502"	2	TR-SMALL SIGNAL "KSA708-Y,PNP,800mW,TO-92,TP,12"	N
1	0502-000245	Q9	1	TR-POWER "KSB1151-Y,PNP,1.3W,TO-126,-,16"	N
1	0502-001124	"Q201,Q202,Q203,Q204"	4	TR-POWER "KSD526,NPN,30W,TO-220,BK,120-2"	N
1	0604-000142	"PC152,PC153"	2	PHOTO-COUPLER "TR,-,200mW,DIP-4,ST"	N
1	0604-000146	PC151	1	PHOTO-COUPLER "TRIAAC,-,250mW,DIP-6,ST"	N
1	0604-001033	"OP1,OP2,OP3,OP4"	4	PHOTO-INTERRUPTER"TR,-,150mW,DIP-4,ST"	N
1	0801-000528	U4	1	IC-CMOS LOGIC "74HCT574,D FLIP-FLOP,DIP,20P,3"	N
1	0801-000722	U6	1	IC-CMOS LOGIC "74HC245,TRANSCEIVER,DIP,20P,30"	N
1	0803-000679	U205	1	IC-TTL "7406,BUFFER/DRIVER,DIP,14P,300"	N
1	0803-001097	U203	1	IC-TTL "7407,BUFFER/DRIVER,DIP,14P,300"	N
1	0903-000219	U3	1	IC-MICROCOMPUTER"88C4316,8BIT,DIP,64P,-,8MHz,ST"	N
1	1103-001045	U2	1	IC-EEPROM "27E512,64Kx8BIT,DIP,28P,600MIL"	Y
1	1201-000229	U201	1	IC-OP AMP "324,DIP,14P,300MIL,QUAD,100V/m"	Y
1	1202-000103	U5	1	IC-VOLTAGE COMP. "393,DIP,8P,300MIL,DUAL,36V,CMO"	N
1	1203-000002	U151	1	IC-POSI.ADJUST REG."431,TO-92,3P,-,PLASTIC,2.44/2."	Y
1	1203-000258	U202	1	IC-POSI.FIXED REG. "7818,TO-220,3P,-,PLASTIC,17.3/"	Y
1	1203-000531	U101	1	IC-SWITCH VOL. REG."5311,DIP,8P,300MIL,PLASTIC,-,3"	Y
1	1404-000167	TH101	1	THERMISTOR-NTC "5ohm,10%,3150K,18.7mW/C,TP"	Y
1	1405-000147	TNR101	1	VARISTOR "470V,4500A,17x12mm,BK"	Y
1	2001-000002	R107	1	R-CARBON(S) "200KOHM,5%,1/2W,AA,TP,6.4X2.4MM"	Y
1	2001-000003	JP122	1	R-CARBON "330OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000003	"R25,R52,R111,R151"	4	R-CARBON "330OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000003	R406	1	R-CARBON "330OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000005	"R221,R231"	2	R-CARBON "390OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000010	R240	1	R-CARBON "68KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000012	R236	1	R-CARBON "680KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000015	R62	1	R-CARBON(S) "0.5OHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2001-000016	R8	1	R-CARBON(S) "1OHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2001-000019	"R217,R230"	2	R-CARBON(S) "10OHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2001-000023	R109	1	R-CARBON "47OHM,5%,1/4W,AA,TP,2.4X6.4MM"	Y
1	2001-000027	R104	1	R-CARBON "100OHM,5%,1/4W,AA,TP,2.4X6.4MM"	Y
1	2001-000045	R274	1	R-CARBON "1.8KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	Y
1	2001-000105	R14	1	R-CARBON "1.5KOHM,5%,1/4W,AA,TP,2.4X6.4MM"	Y
1	2001-000118	R103	1	R-CARBON(S) "180OHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2001-000221	R39	1	R-CARBON "1.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000273	R238	1	R-CARBON "100KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000281	"R15,R24,R29,R30,R31"	5	R-CARBON "100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000281	"R155,R252,R282,R283"	4	R-CARBON "100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000281	"R284,R285,R293,R422"	4	R-CARBON "100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000281	R514	1	R-CARBON "100OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000294	R205	1	R-CARBON "10MOHM,5%,1/4W,AA,TP,2.4X6.4MM"	Y
1	2001-000319	R215	1	R-CARBON "120KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000331	"R56,R63"	2	R-CARBON "12KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000362	"R16,R23,R64"	3	R-CARBON "150OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000362	R512	1	R-CARBON "150OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000429	"R18,R33,R34"	3	R-CARBON "1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000429	R408	1	R-CARBON "1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000429	"R41,R42,R44,R45,R46"	5	R-CARBON "1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y

Electrical Parts List

Engine Board

Lev	SEC Code	Location NO.	Q'ty	Description/Specification	Svc.
1	2001-000429	R49	1	R-CARBON "1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000435	R502	1	R-CARBON "1MOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000449	"R48,R225,R250,R256"	4	R-CARBON "2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000449	"R501,R504"	2	R-CARBON "2.2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000515	"R27,R424,R425,R426"	4	R-CARBON "220OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000552	R112	1	R-CARBON "270OHM,5%,1/4W,AA,TP,2.4X6.4MM"	Y
1	2001-000563	R253	1	R-CARBON "27KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000565	R517	1	R-CARBON "27OHM,5%,1/2W,AA,TP,3.3X9MM"	Y
1	2001-000577	R152	1	R-CARBON "2KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000660	R249	1	R-CARBON "33KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000660	"R257,R263,R266"	3	R-CARBON "33KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000660	"R500,R503,R507"	3	R-CARBON "33KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000734	R110	1	R-CARBON "4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000734	R251	1	R-CARBON "4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000761	R218	1	R-CARBON "430OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000780	R156	1	R-CARBON "470OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000786	"R54,R223,R224,R227"	4	R-CARBON "47KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000812	"R19,R26,R28,R35,R36"	5	R-CARBON "5.6KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000812	"R261,R405"	2	R-CARBON "5.6KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000812	"R38,R40,R51,R59"	4	R-CARBON "5.6KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000812	"R60,R61,R260"	3	R-CARBON "5.6KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000816	R113	1	R-CARBON "5.6OHM,5%,1/4W,AA,TP,2.4X6.4MM"	Y
1	2001-000832	"R20,R407"	2	R-CARBON "510OHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-000864	"R53,R248"	2	R-CARBON "56KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-001015	R262	1	R-CARBON "9.1KOHM,5%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2001-001070	R102	1	R-CARBON(S) "120OHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2001-001093	R292	1	R-CARBON(S) "2.2KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2001-001119	"R210,R212,R226,R229"	4	R-CARBON(S) "3.3MOHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2001-001119	R239	1	R-CARBON(S) "3.3MOHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2001-001150	"R101,R105"	2	R-CARBON(S) "470KOHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2001-001165	"R216,R219"	2	R-CARBON(S) "56OHM,5%,1/2W,AA,TP,2.4X6.4MM"	Y
1	2003-000703	"R157,R158"	2	R-METAL OXIDE(S) "470ohm,5%,3W,AA,TP,6x16mm"	Y
1	2003-000706	R108	1	R-METAL OXIDE(S) "47Kohm,5%,2W,AA,TP,4.3x12mm"	Y
1	2004-000002	R247	1	R-METAL "78.7Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-000003	R237	1	R-METAL "16.2Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-000345	"R17,R22,R55,R222"	4	R-METAL "15Kohm,1%,1/8W,AA,TP,1.8x3.2mm"	Y
1	2004-000345	R43	1	R-METAL "15Kohm,1%,1/8W,AA,TP,1.8x3.2mm"	Y
1	2004-000345	R513	1	R-METAL "15Kohm,1%,1/8W,AA,TP,1.8x3.2mm"	Y
1	2004-000385	"R510,R268"	2	R-METAL "17.4Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-000433	"R58,R213"	2	R-METAL "1Kohm,1%,1/8W,AA,TP,1.8x3.2mm"	Y
1	2004-000544	R508	1	R-METAL "21.5Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-000691	R153	1	R-METAL "3.16Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-000699	"R516,R57"	2	R-METAL "3.3Kohm,1%,1/8W,AA,TP,1.8x3.2m"	Y
1	2004-000754	R511	1	R-METAL "309Kohm,1%,1/8W,AA,TP,1.8x3.2m"	Y
1	2004-000869	R154	1	R-METAL "3Kohm,1%,1/8W,AA,TP,1.8x3.2mm"	Y
1	2004-000884	R37	1	R-METAL "4.3Kohm,1%,1/8W,AA,TP,1.8x3.2m"	Y
1	2004-000900	R47	1	R-METAL "4.7Kohm,1%,1/8W,AA,TP,1.8x3.2m"	Y
1	2004-000965	R243	1	R-METAL "470Kohm,1%,1/8W,AA,TP,1.8x3.2m"	Y
1	2004-001156	R509	1	R-METAL "619Kohm,1%,1/8W,AA,TP,1.8x3.2m"	Y
1	2004-001231	R269	1	R-METAL "75Kohm,1%,1/8W,AA,TP,1.8x3.2mm"	Y
1	2004-001315	R234	1	R-METAL "86.6Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-001315	R505	1	R-METAL "86.6Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-001357	R233	1	R-METAL "93.1Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-001357	R515	1	R-METAL "93.1Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-002001	R245	1	R-METAL "12.1Kohm,1%,1/8W,AA,TP,1.8x3.2"	Y
1	2004-004179	R258	1	R-METAL "174KOHM,1%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2004-004425	R506	1	R-METAL "76.8KOHM,1%,1/8W,AA,TP,1.8X3.2MM"	Y
1	2005-000168	R114	1	"R-WIRE WOUND,NON" "0.22ohm,5%,2W,AA,BK,4x12mm"	Y
1	2009-001041	"R208,R209"	2	R-METAL GLAZE "2Mohm,1%,1/4W,AA,TP,3X9mm"	Y
1	2009-001042	"R204,R207,R277"	3	R-METAL GLAZE "4.7Mohm,1%,1/4W,AA,TP,3x9mm"	Y
1	2009-001082	R280	1	R-METAL GLAZE "30Mohm,2%,2W,-,BK,30x8.5mm"	Y
1	2009-001083	R220	1	R-METAL GLAZE "200Mohm,2%,1/2W,CM,BK,18x6mm"	Y
1	2009-001084	R211	1	R-METAL GLAZE "30Mohm,2%,0.5W,CM,BK,18x6mm"	Y
1	2009-001085	R201	1	R-METAL GLAZE "10Mohm,3%,1/2W,CM,BK,18x4mm"	Y
1	2103-000156	"VR201,VR202,VR204"	3	VR-SEMI "10Kohm,10%,1/2W,TOP"	Y
1	2103-000270	VR203	1	VR-SEMI "20Kohm,10%,1/2W,TOP"	Y
1	2103-001079	VR205	1	VR-SEMI "100Kohm,15%,1/2W,TOP"	N
1	2201-000003	C203	1	"C-CERAMIC,DISC" "68pF,10%,2KV,SL,TP,8x5.5"	Y
1	2201-000004	C220	1	"C-CERAMIC,DISC" "100pF,10%,2KV,SL,TP,8x5.5"	Y
1	2201-000004	C404	1	"C-CERAMIC,DISC" "100pF,10%,2KV,SL,TP,8x5.5"	Y
1	2201-000017	"C17,C22,C27,C29"	4	"C-CERAMIC,DISC" "1nF,10%,50V,Y5P,TP,4x3.5.5"	Y
1	2201-000017	"C31,C38,C39,C40,C41"	5	"C-CERAMIC,DISC" "1nF,10%,50V,Y5P,TP,4x3.5.5"	Y
1	2201-000017	"C42,C43,C45,C237"	4	"C-CERAMIC,DISC" "1nF,10%,50V,Y5P,TP,4x3.5.5"	Y
1	2201-000019	"C106,C501"	2	"C-CERAMIC,DISC" "10nF,+80-20%,500V,Y5V,TP,13.5x"	Y
1	2201-000023	"C103,C104,C115"	3	"C-CERAMIC,DISC" "2.2nF,20%,125V,Y5U,TP,11x7.5"	Y
1	2201-000119	C209	1	"C-CERAMIC,DISC" "100nF,+80-20%,50V,Y5V,TP,8x3.5"	Y
1	2201-000119	"C222,C226,C227,C229"	4	"C-CERAMIC,DISC" "100nF,+80-20%,50V,Y5V,TP,8x3.5"	Y

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Lev	SEC Code	Location NO.	Q'ty	Description/Specification	Svc.
1	2201-000119	"C26,C32,C34,C37,C46"	5	"C-CERAMIC,DISC" "100nF,+80-20%,50V,Y5V,TP,8x3.5"	Y
1	2201-000138	"C16,C28,C30,C402"	4	"C-CERAMIC,DISC" "100pF,10%,50V,Y5P,TP,4.0X4.0,2"	N
1	2201-000154	C108	1	"C-CERAMIC,DISC" "10nF,+80-20%,2KV,Y5P,TP,20x5,1"	Y
1	2201-000162	"C1,C13,C14"	3	"C-CERAMIC,DISC" "10NF,+80-20%,50V,Y5V,TP,6.3X3,5"	Y
1	2201-000162	C19	1	"C-CERAMIC,DISC" "10NF,+80-20%,50V,Y5V,TP,6.3X3,5"	Y
1	2201-000162	"C217,C231"	2	"C-CERAMIC,DISC" "10NF,+80-20%,50V,Y5V,TP,6.3X3,5"	Y
1	2201-000162	"C24,C36"	2	"C-CERAMIC,DISC" "10NF,+80-20%,50V,Y5V,TP,6.3X3,5"	Y
1	2201-000162	C405	1	"C-CERAMIC,DISC" "10NF,+80-20%,50V,Y5V,TP,6.3X3,5"	Y
1	2201-000326	"C221,C223,C225"	3	"C-CERAMIC,DISC" "2.2nF,10%,50V,Y5P,TP,6.5x3,5"	Y
1	2201-000326	C230	1	"C-CERAMIC,DISC" "2.2nF,10%,50V,Y5P,TP,6.5x3,5"	Y
1	2201-000326	C500	1	"C-CERAMIC,DISC" "2.2nF,10%,50V,Y5P,TP,6.5x3,5"	Y
1	2201-000391	"C20,C21"	2	"C-CERAMIC,DISC" "22pF,5%,50V,SL,TP,5.0x3.0,5"	Y
1	2201-000473	"C207,C208,C210,C214"	4	"C-CERAMIC,DISC" "33nF,+80-20%,50V,Y5V,TP,6x3,5"	Y
1	2201-000473	C224	1	"C-CERAMIC,DISC" "33nF,+80-20%,50V,Y5V,TP,6x3,5"	Y
1	2201-000645	C111	1	"C-CERAMIC,DISC" "680pF,5%,50V,SL,TP,10*3,5"	Y
1	2201-000724	"C201,C204,C219"	3	"C-CERAMIC,DISC" "470pF,0.1,3KV,Y5P,TP,8x5,5"	Y
1	2201-000724	"C202,C206"	2	"C-CERAMIC,DISC" "470pF,0.1,3KV,Y5P,TP,8x5,5"	Y
1	2201-002066	"C211,C212,C215,C216"	4	"C-CERAMIC,DISC" "470pF,10%,6KV,Y5P,TP,10x7,10"	Y
1	2201-002067	C213	1	"C-CERAMIC,DISC" "100pF,10%,6KV,Y5P,TP,8x7,10"	Y
1	2202-000002	"C10,C12,C15,C18,C401"	5	"C-CERAMIC,MLC-AXIAL" "10nF,0.05,500V,X7R,TP,5.1x6.4x"	Y
1	2202-000002	C502	1	"C-CERAMIC,MLC-AXIAL" "10nF,0.05,500V,X7R,TP,5.1x6.4x"	Y
1	2202-000654	"C110,C112"	2	"C-CERAMIC,MLC-RADIAL" "100nF,10%,50V,X7R,TP,5.1x6.6,5"	Y
1	2301-000490	"C113,C505"	2	"C-FILM,PEF" "4.7nF,5%,100V,TP,5.8x3.1x12.5,"	Y
1	2305-001021	C102	1	"C-FILM,MPEF" "100nF,20%,275V,TP,17.5x7x13.5,"	Y
1	2306-000212	C101	1	"C-FILM,MPPF" "470NF,20%,275V,BK,-,22.5"	N
1	2401-000183	"C156,C157"	2	C-AL "1000uF,20%,35V,WT,TP,12.5x25,5"	N
1	2401-000207	"C228,C503,C504,C506"	4	C-AL "100uF,20%,50V,WT,TP,8x12,5"	Y
1	2401-000613	"C109,C152"	2	C-AL "1uF,20%,50V,WT,TP,5x11,5"	Y
1	2401-000697	C151	1	C-AL "2200uF,20%,16V,WT,TP,12.5x25,5"	Y
1	2401-001476	C11	1	C-AL "47uF,20%,10V,GP,TP,6.3x5mm,2,5"	Y
1	2401-001585	C114	1	C-AL "47uF,20%,50V,WT,TP,8x11.5,5"	Y
1	2401-001691	C107	1	C-AL "150uF,20%,400V,WT,BK,30x25,10"	Y
1	2401-001700	"C153,C154,C155"	3	C-AL "470uF,20%,10V,-,10x12.5,-"	Y
1	2401-002075	"C33,C35"	2	C-AL "4.7uF,20%,50V,GP,TP,5x11.5"	Y
1	2801-000002	X1	1	CRYSTAL-UNIT "6.94407MHz,50ppm,28-AAM,20pF,5"	Y
1	2902-001011	"BD1,BD101,BD102"	3	FILTER-LINE "-,-,-"	Y
1	2902-001011	"BD103,BD151,BD152"	3	FILTER-LINE "-,-,-"	Y
1	3301-000344	"FB1,FB2,FB3,FB4,FB5"	5	CORE-FERRITE BEAD "ZZ,3.5x6.5mm,-,-"	Y
1	3601-000003	F151	1	FUSE-FERRULE "250V,5A,FA,GLASS,20X5.2MM"	Y
1	3601-000296	F101	1	FUSE-FERRULE "250V,5A,TL,CERAMIC,5X20MM"	Y
1	3602-000001	"FH1,FH2,FH3,FH4"	4	FUSE-CLIP "-,-,30mohm"	Y
1	3704-000235	U2	1	SOCKET-IC "28P,DIP,SN,2.54mm"	Y
1	3711-000164	CN4	1	CONNECTOR-HEADER "1WALL,2P,1R,2.5mm,STRAIGHT,SN"	Y
1	3711-000217	CN101	1	CONNECTOR-HEADER "1WALL,3P,1R,3.96mm,STRAIGHT,SN"	Y
1	3711-000236	CN12	1	CONNECTOR-HEADER "1WALL,4P,1R,3.96mm,STRAIGHT,SN"	Y
1	3711-000633	CN3	1	CONNECTOR-HEADER "BOX,11P,1R,2mm,STRAIGHT,SN"	Y
1	3711-000782	CN105	1	CONNECTOR-HEADER "BOX,2P,1R,2.0mm,STRAIGHT,SN"	Y
1	3711-000865	CN103	1	CONNECTOR-HEADER "BOX,3P,1R,2mm,STRAIGHT,SN"	Y
1	3711-001108	CN6	1	CONNECTOR-HEADER "BOX,8P,1R,2mm,STRAIGHT,SN"	N
1	3711-002104	CN102	1	CONNECTOR-HEADER "1WALL,2P,1R,7.92mm,STRAIGHT,SN"	Y
1	3711-002410	CN104	1	CONNECTOR-HEADER "BOX,10P,2R,2mm,STRAIGHT,SN"	Y
1	3711-002653	CN7	1	CONNECTOR-HEADER "BOX,3P,1R,2.5mm,STRAIGHT,SN"	Y
1	3711-003204	CN5	1	CONNECTOR-HEADER "BOX,24P,2R,2mm,STRAIGHT,SN"	Y
1	3711-003205	CN2	1	CONNECTOR-HEADER "BOX,4P,1R,2.0mm,STRAIGHT,SN"	Y
1	3711-003969	"CN8,CN10"	2	CONNECTOR-HEADER "BOX,2P,1R,2.5mm,STRAIGHT,SN"	Y
1	JC26-20301B	"T201,T202,T204"	3	TRANS AF- "ML-80,-,95MH"	Y
1	JC26-20301D	T101	1	TRANS AF- "ML-80,-,0.32WIRE"	Y
1	JC26-30506A	T203	1	TRANS POWER-THV "ML-7000,-,57.5/1.3uH,180mH"	Y
1	JC27-40502A	L103	1	COIL CHOCK-68UH "ML5500,68uH,0.04ohm,32T"	Y
1	JC27-60101B	L152	1	COIL FILTER- "9UH,-,-"	Y
1	JC27-60101C	L151	1	COIL FILTER- "6UH,-,-"	Y
1	JC27-60501A	L101	1	COIL FILTER-LINE220V "ML5500,13.0mH,0.10ohm,-"	Y
1	JC27-60503A	L102	1	COIL FILTER-3MH "ML5500,3.0mH,0.40ohm,30T"	Y
1	JC33-10501B	-	1	SOLENOID-6000 "ML-6000,24VDC,72W,57,39X39X22,"	Y
1	JC39-40511A	"JP104~JP109"	6	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP110~JP115"	6	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP116~JP120"	5	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP121~JP126"	5	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP127~JP132"	6	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP133~JP138"	6	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP139~JP143"	6	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP144~JP148"	5	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP149~JP154"	6	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP155~JP160"	6	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP16,JP17,JP21~JP23"	5	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP161~JP166"	6	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y
1	JC39-40511A	"JP167~JP172"	6	CBF HARNESS- "ML-80,JUMPER,AWG22,52mm,SILVER"	Y

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1	JC39-40511A	"JP173~JP177"	5	CBF HARNESS-	Y
1	JC39-40511A	"JP178,JP179,JP180,JP181,JP182"	5	CBF HARNESS-	Y
1	JC39-40511A	"JP188,JP189,JP190,JP191,JP192"	5	CBF HARNESS-	Y
1	JC39-40511A	"JP193~JP198"	6	CBF HARNESS-	Y
1	JC39-40511A	"JP199,JP200,JP203,JP187,JP268"	5	CBF HARNESS-	Y
1	JC39-40511A	"JP204,JP205,JP206,JP208"	4	CBF HARNESS-	Y
1	JC39-40511A	"JP209~JP214"	6	CBF HARNESS-	Y
1	JC39-40511A	"JP217~JP222"	6	CBF HARNESS-	Y
1	JC39-40511A	"JP223~JP228"	6	CBF HARNESS-	Y
1	JC39-40511A	"JP229~JP234"	6	CBF HARNESS-	Y
1	JC39-40511A	"JP25~JP31,JP216"	8	CBF HARNESS-	Y
1	JC39-40511A	"JP272~JP276,JP601"	6	CBF HARNESS-	Y
1	JC39-40511A	"JP33~JP39"	7	CBF HARNESS-	Y
1	JC39-40511A	"JP40~JP47"	8	CBF HARNESS-	Y
1	JC39-40511A	"JP49,JP50,JP51,JP52"	4	CBF HARNESS-	Y
1	JC39-40511A	"JP55~JP60,JP62,JP63"	8	CBF HARNESS-	Y
1	JC39-40511A	"JP602,JP605,JP616,JP7"	4	CBF HARNESS-	Y
1	JC39-40511A	"JP617,R412"	2	CBF HARNESS-	Y
1	JC39-40511A	"JP65~JP72"	8	CBF HARNESS-	Y
1	JC39-40511A	"JP73~JP80"	8	CBF HARNESS-	Y
1	JC39-40511A	"JP8,JP10,JP11,JP13"	4	CBF HARNESS-	Y
1	JC39-40511A	"JP81~JP88"	8	CBF HARNESS-	Y
1	JC39-40511A	"JP89~JP96"	8	CBF HARNESS-	Y
1	JC39-40511A	"JP97~JP103"	7	CBF HARNESS-	Y
1	JC39-40511A	"JS3,JS4,JS5,JP4,JP5,JP6"	6	CBF HARNESS-	Y
1	JC41-10529A	-	1	PCB-ENGINE	Y
1	JC70-10909A	"HP1,HP2,HP3,HP4"	4	IPR-CONNECTOR HV	Y
1	JC96-00319A	-	1	ELA HOU-H/SINK	Y
2	0402-000304	D153	1	DIODE-RECTIFIER	N
2	0402-000314	D152	1	DIODE-RECTIFIER	N
2	0502-001124	"Q201,Q203"	2	TR-POWER	N
2	0505-000173	Q102	1	FET-SILICON	N
2	1401-000108	Q101	1	THYRISTOR-TRIAC	Y
2	6003-000008	"Q201,Q101"	2	SCREW-TAPTITE	Y
2	6003-000119	"D152,D153,Q203"	3	SCREW-TAPTITE	Y
2	JC61-70100A	SMPS H/SINK	1	SPRING-PS	Y
2	JC62-20001A	Q102	1	TUBE-IRF840	N
2	JC62-30001A	"Q102,D152,D153"	1	HEAT SINK-TRANS	Y
2	JC62-30002A	Q203	1	HEAT SINK-SMPS	Y
2	JF62-30201A	"Q101,Q201"	2	HEAT SINK	Y
1	JF68-30527H	-	1	LABEL(R)-BAR CODE	N
1	JF68-30527N	-	1	LABEL(R)-BAR CODE	N

Electrical Parts List

07-3 Panel Board

Lev	SEC Code	Location NO.	Q'ty	Description/Specification		Svc.
1	0601-000161		1	LED	"ROUND,GRN,5mm,563nm"	N
1	0601-000255		1	LED	"ROUND,RED,5mm,700nm"	N
1	0601-000304		2	LED	"ROUND,YEL,5mm,585nm"	N
1	2001-000032		4	R-CARBON	"180OHM,5%, 1/4W,AA,TP,2.4X6.4MM"	Y
1	2202-000579		1	"C-CERAMIC,MLC-AXIAL"	"100nF,+80-20%,50V,Z5U,TP,2.5x4"	Y
1	3404-000116		1	SWITCH-TACT	"12V,50mA,160gf,6X6X3.6mm,SPST"	Y
1	3711-001096		1	CONNECTOR-HEADER	"BOX,7P,1R,2.5mm,ANGLE,SN"	Y
1	JC41-10003A		1	PCB-PANEL LED	"ML-85/84,FR-4,2L,1.6T,47X71"	Y

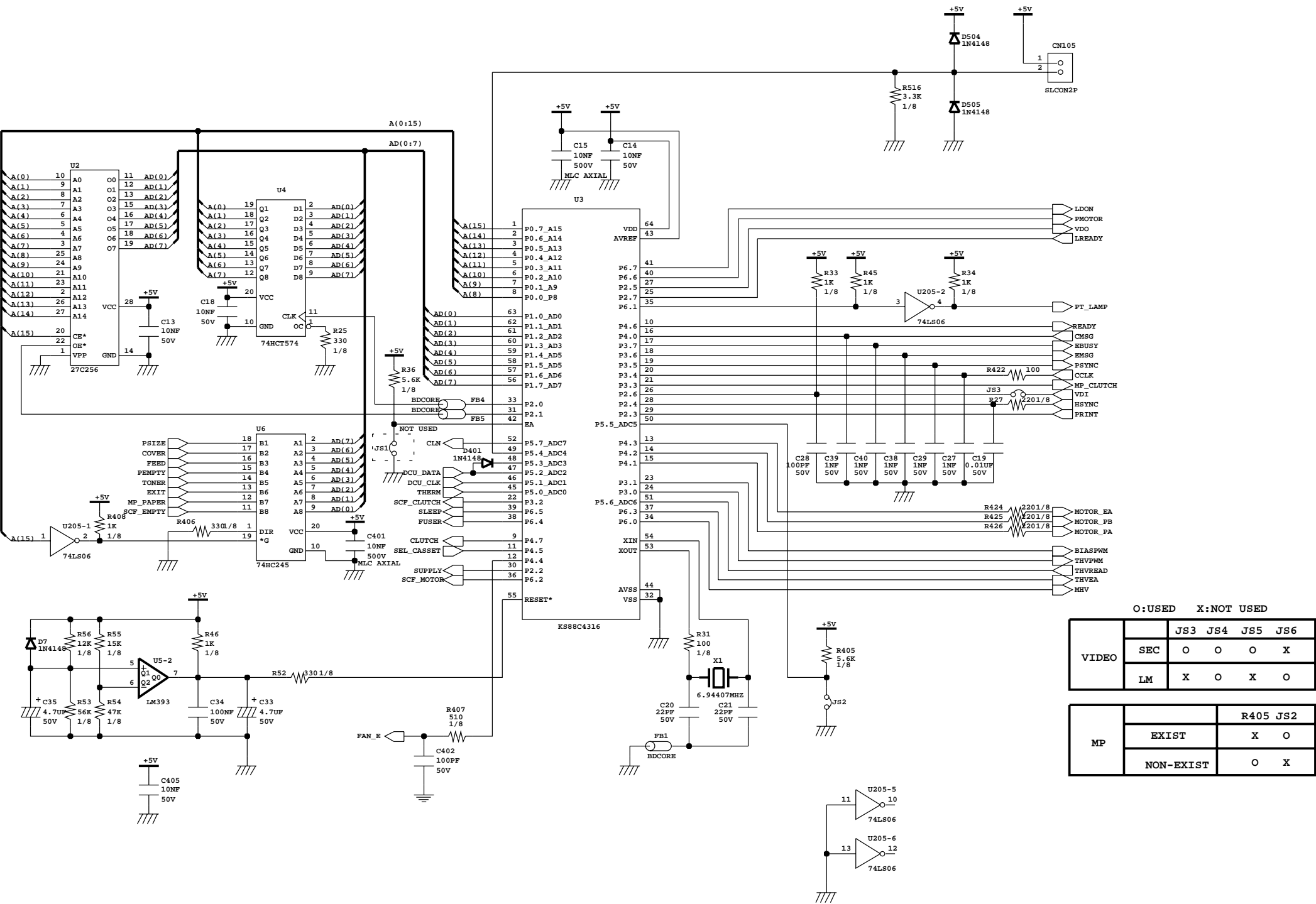
Electrical Parts List

07-4 PTL Board

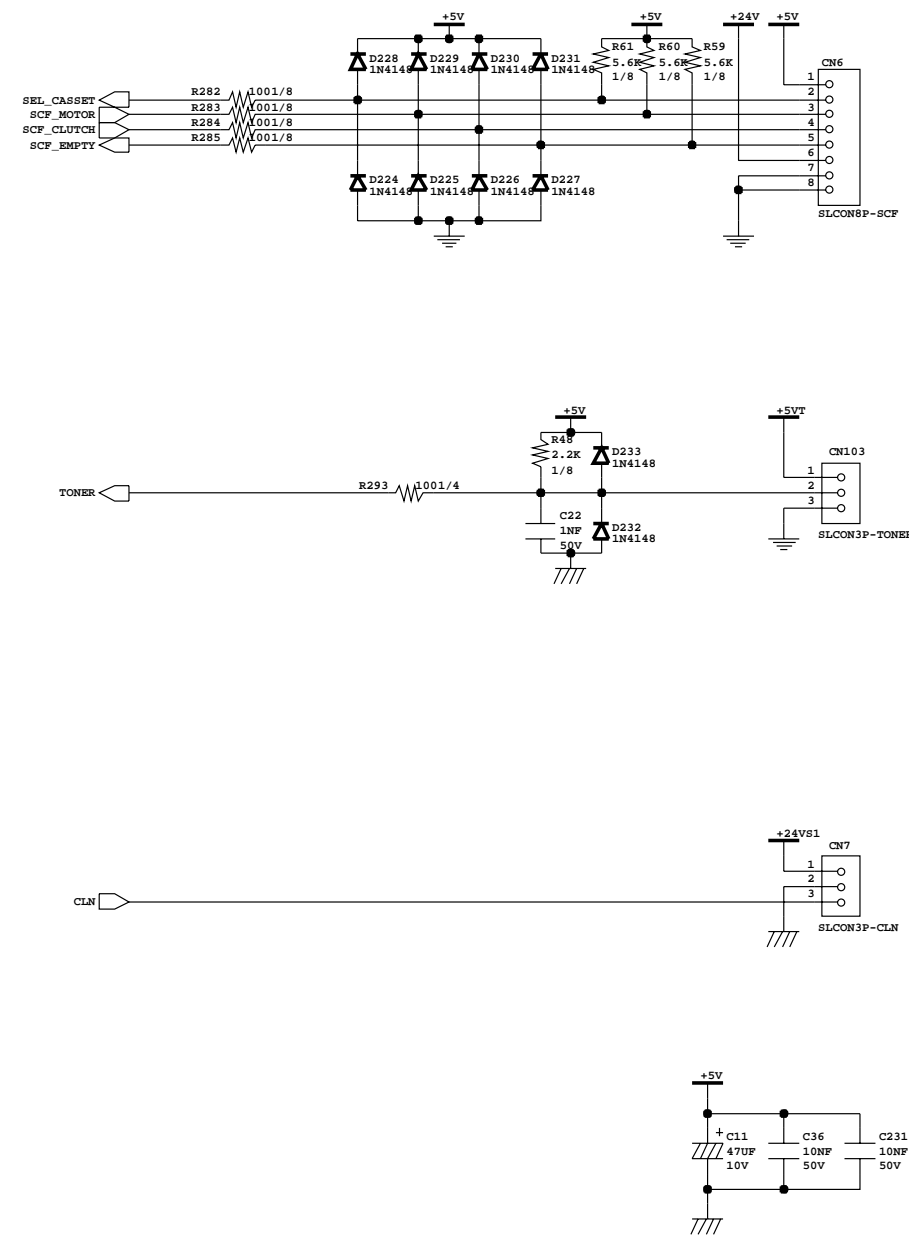
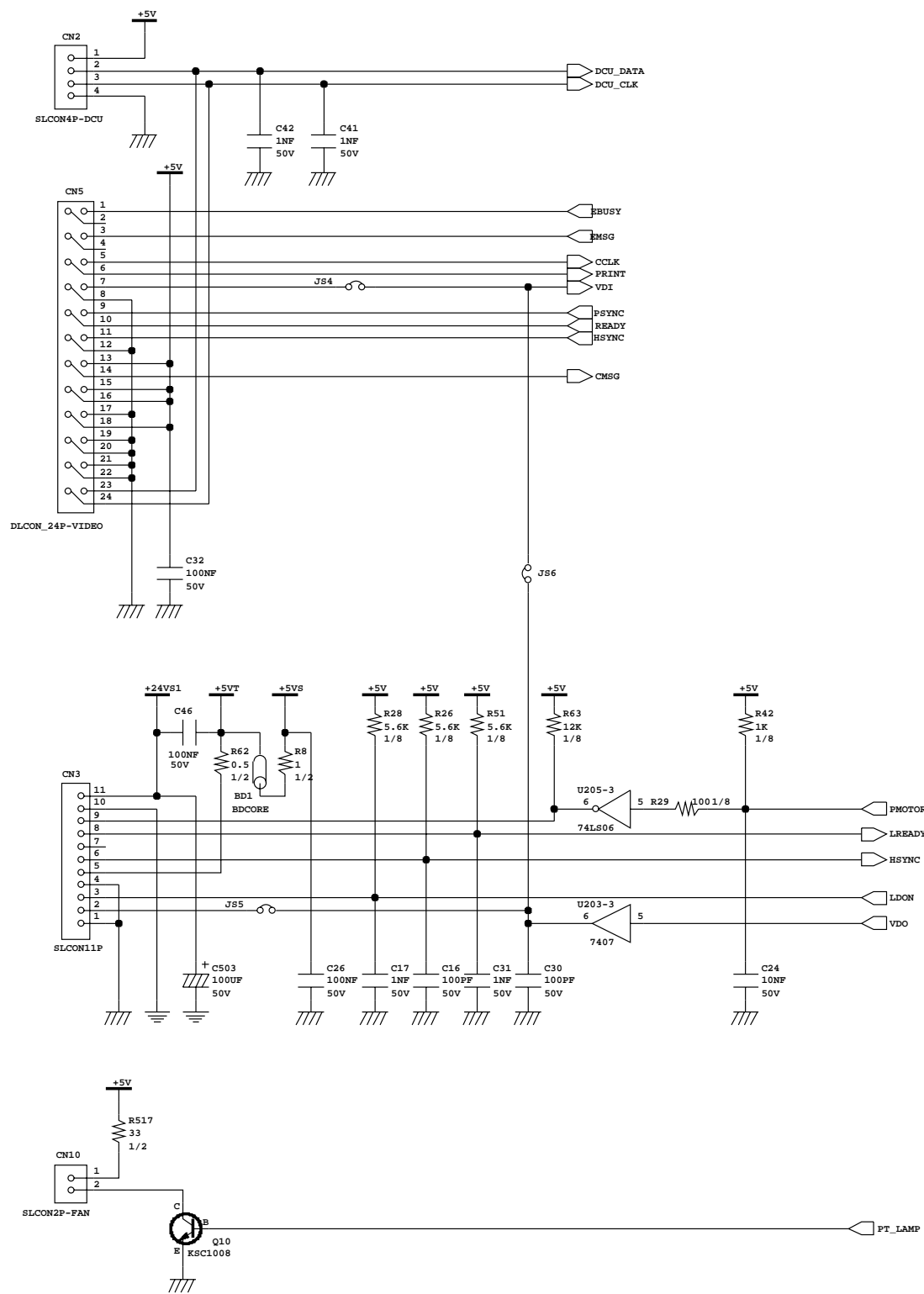
Lev	SEC Code	Location NO.	Q'ty	Description/Specification	Svc.
1	0601-001383	"LD1~LD10"	10	LED	"ROUND,RED,3.0MM,700NM"
1	0601-001383	"LD11~LD18"	8	LED	"ROUND,RED,3.0MM,700NM"
1	JC41-10530A	-	1	PCB-PTL	"ML-5500,FRI,1L,T1.6,218X8.5"
					Y

8. Schematic Diagrams

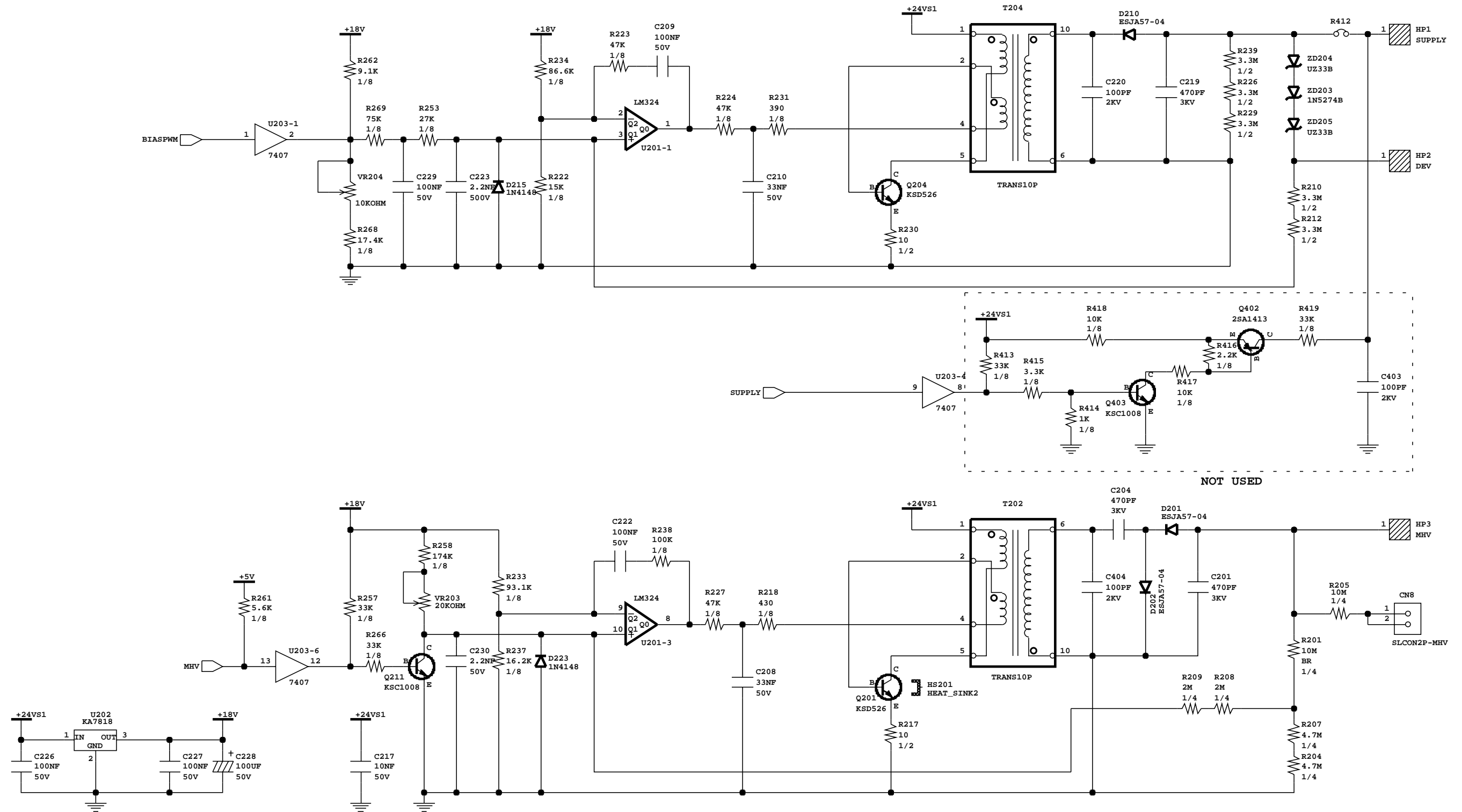
8-1. Engine Controller (1/6)



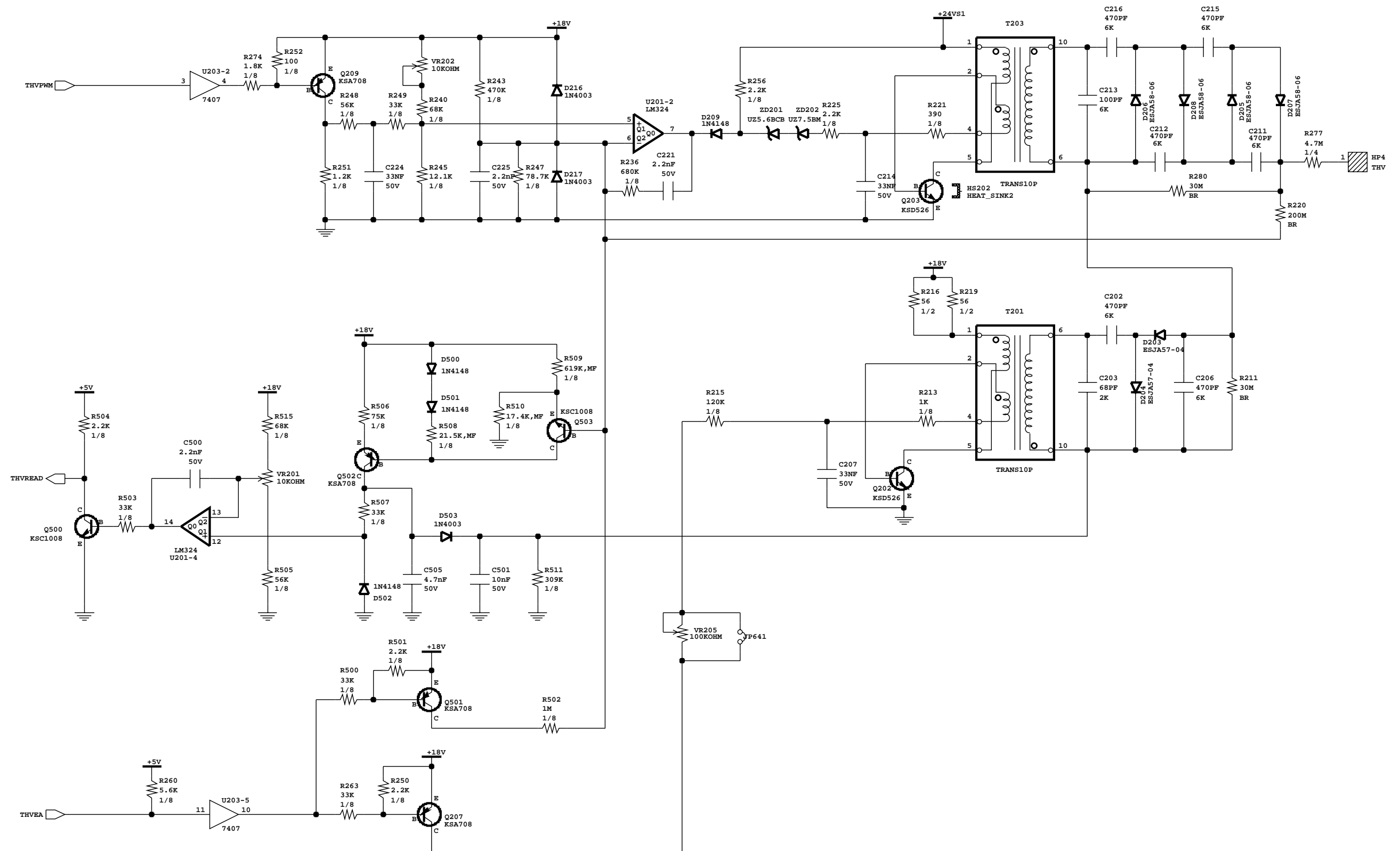
Engine Controller (2/6)



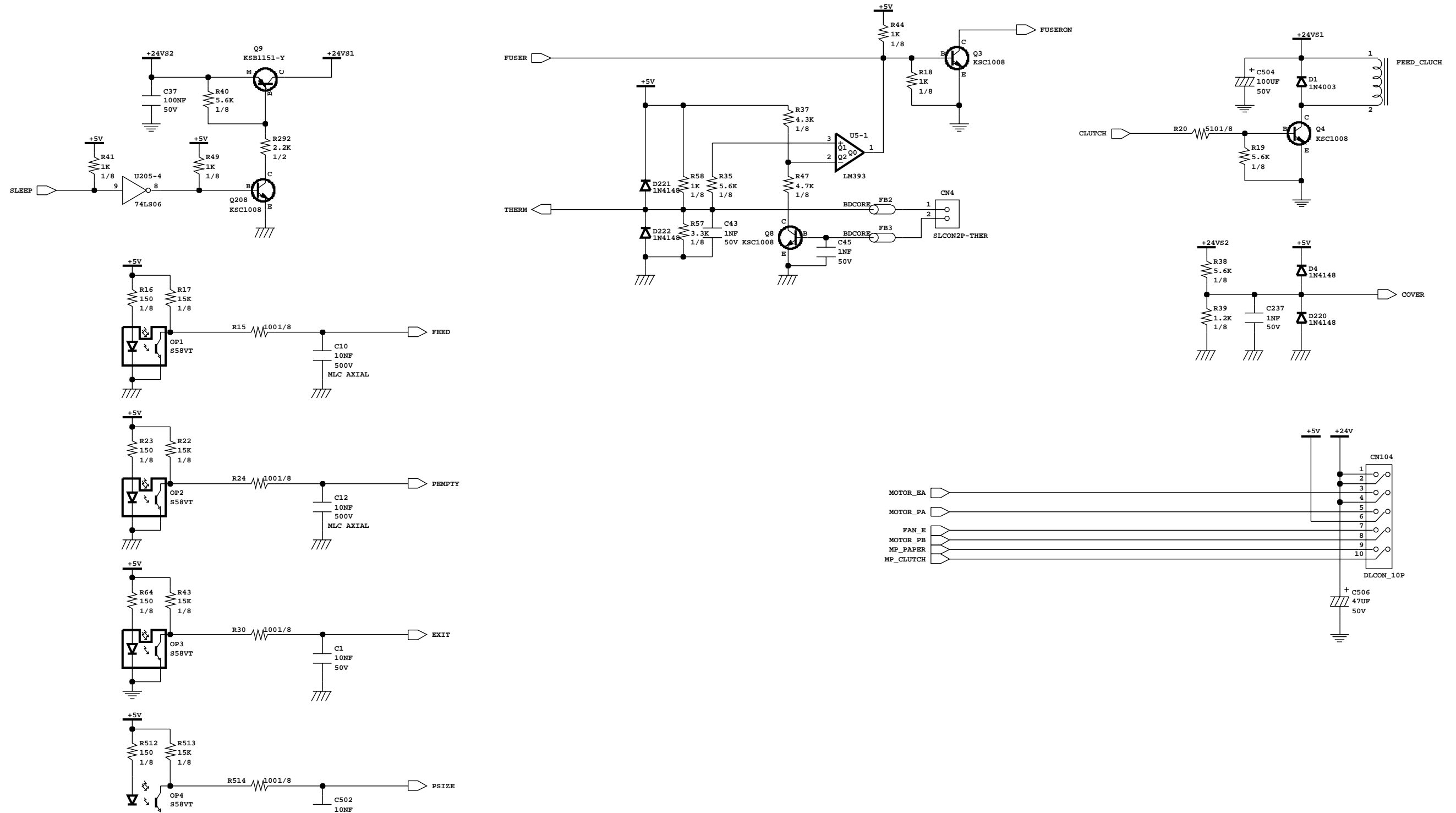
Engine Controller (3/6)



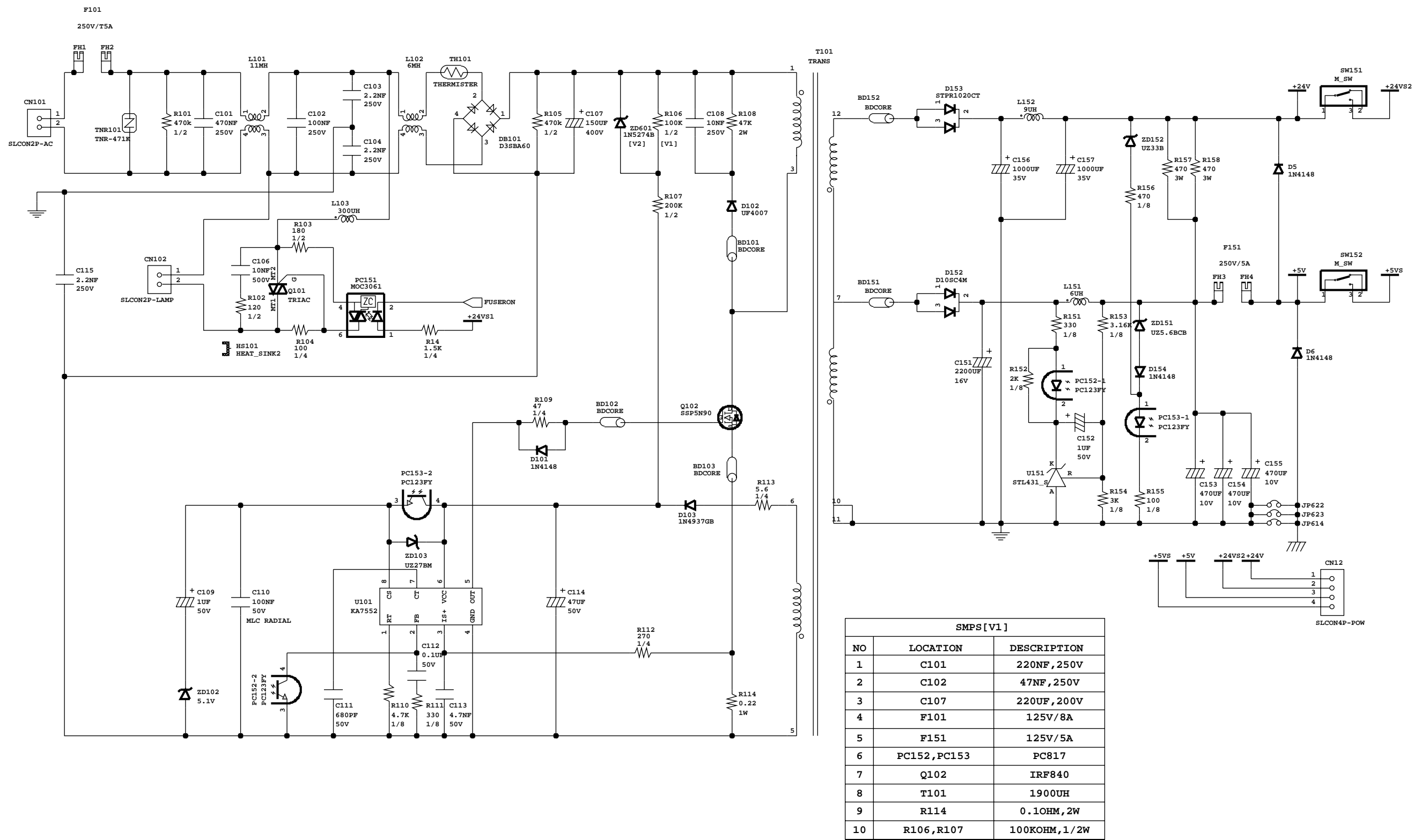
Engine Controller (4/6)



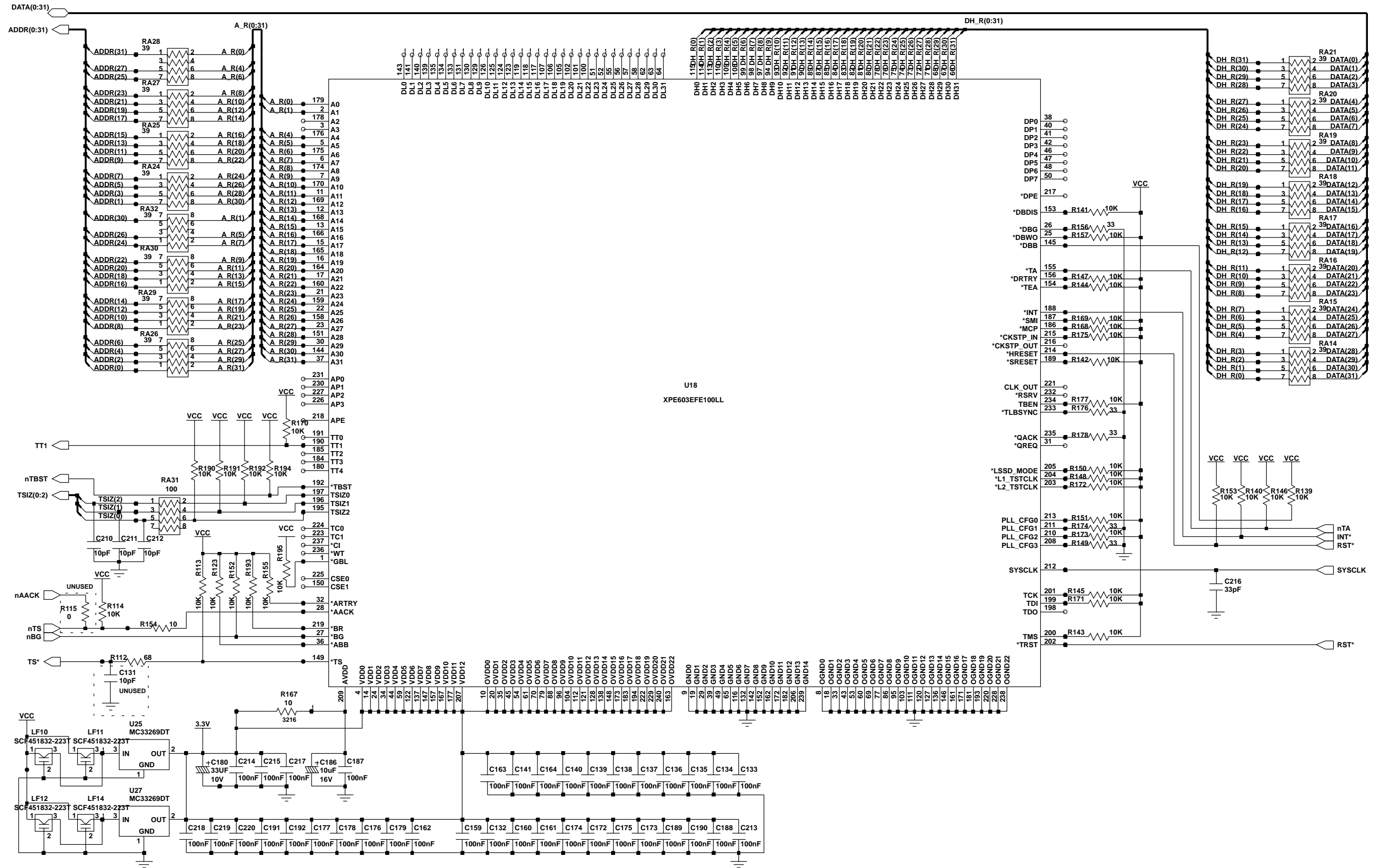
Engine Controller (5/6)



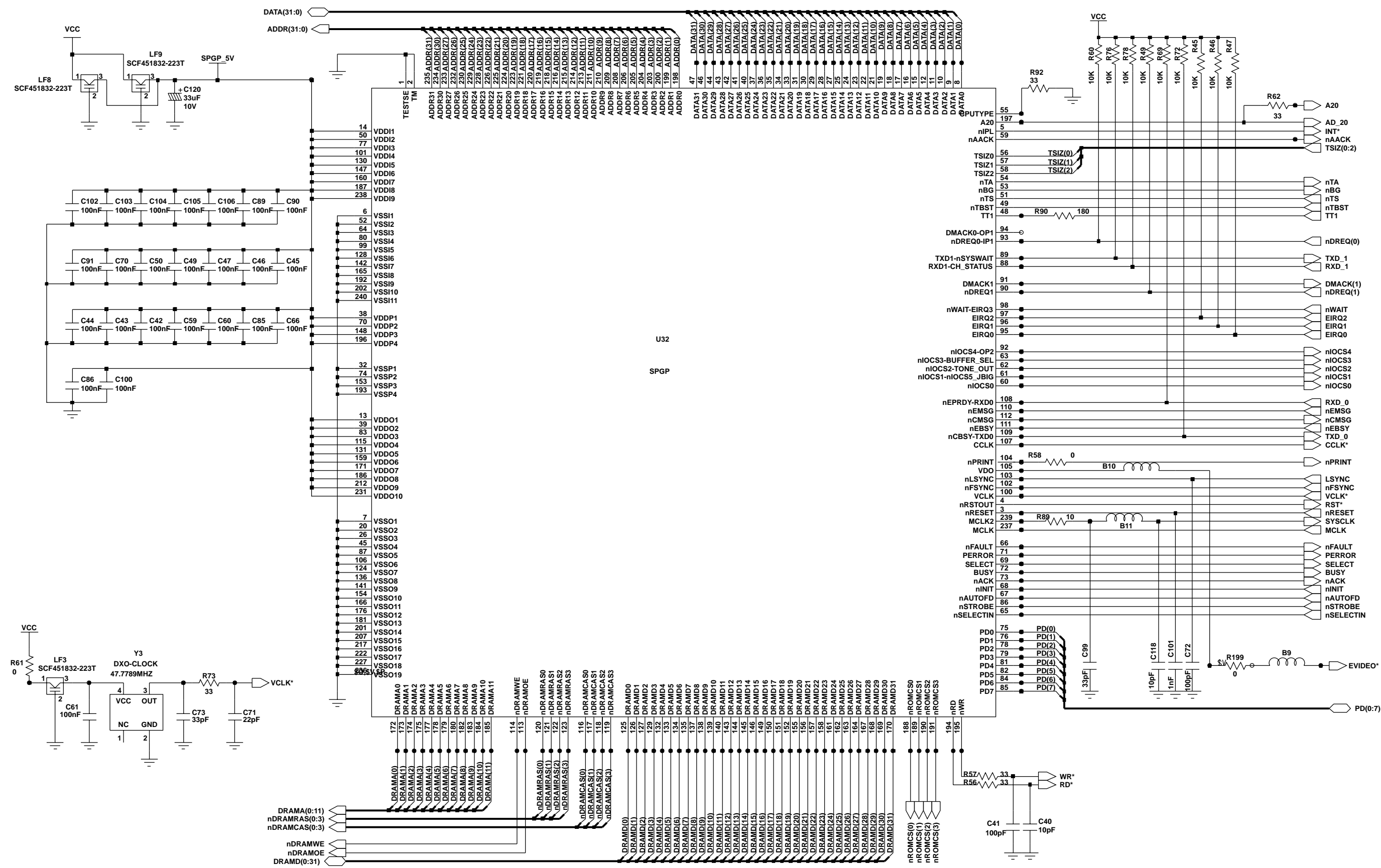
Engine Controller (6/6)



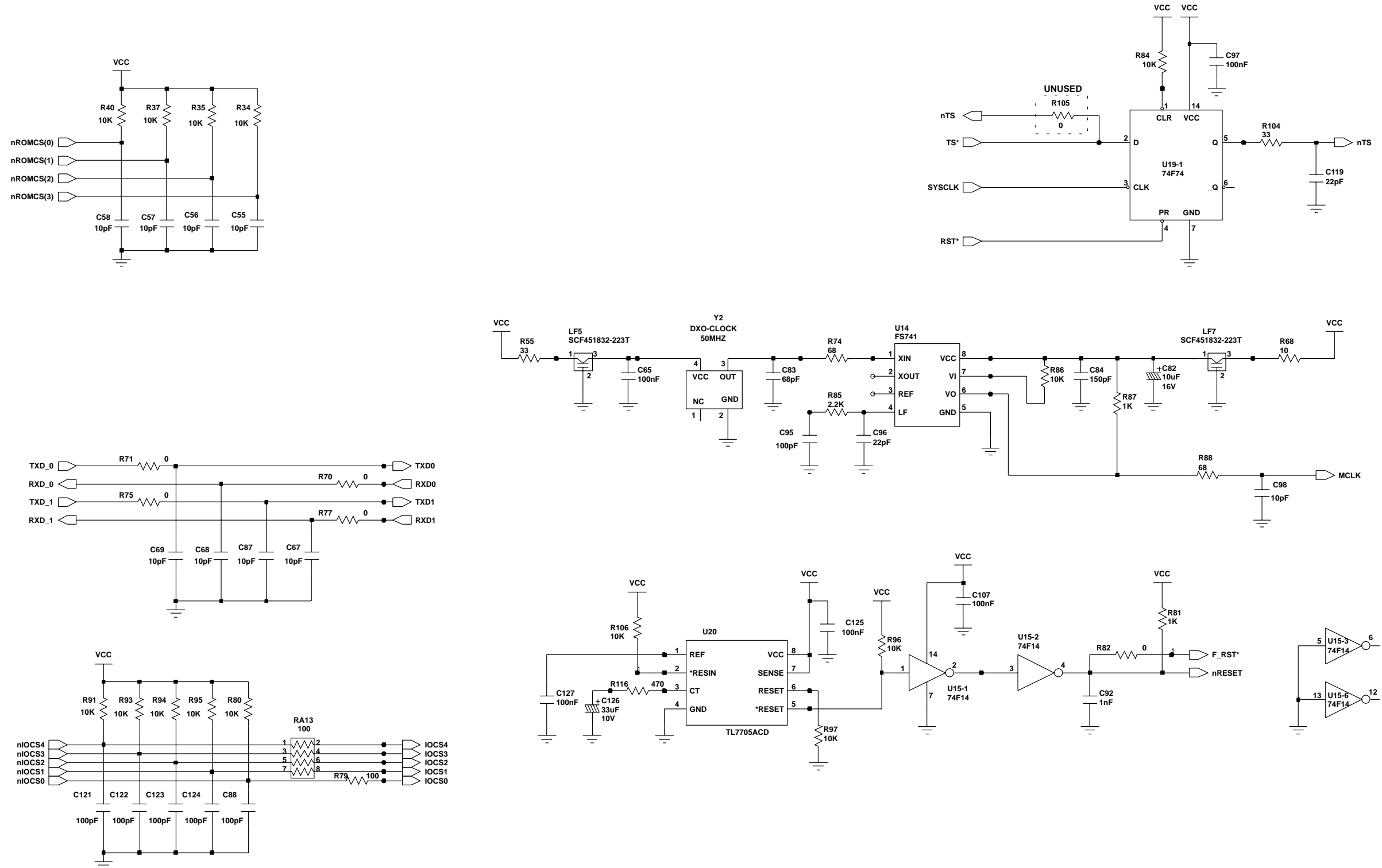
8-2. Controller Diagram(1/11)



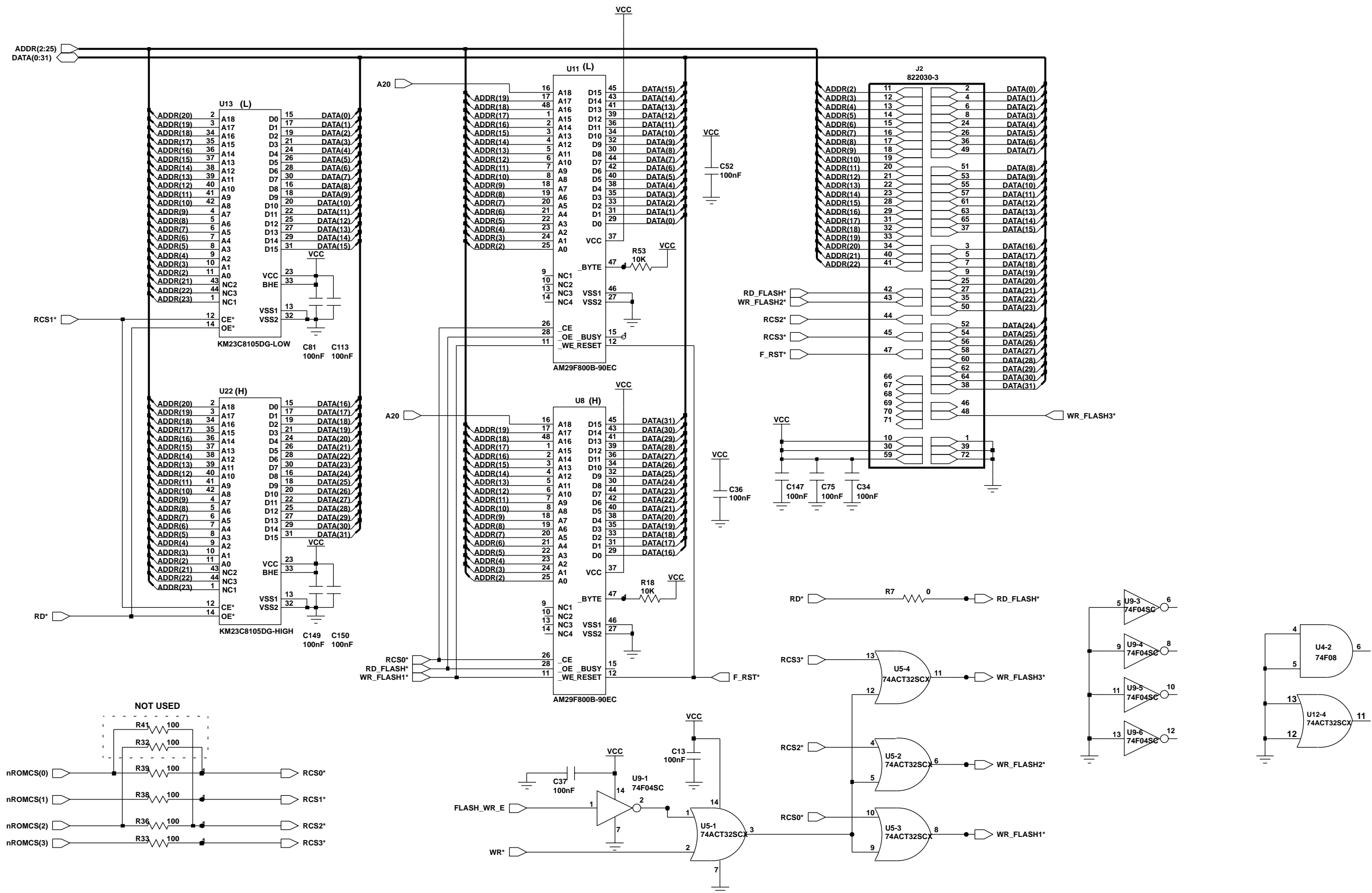
Controller Diagram(2/11)



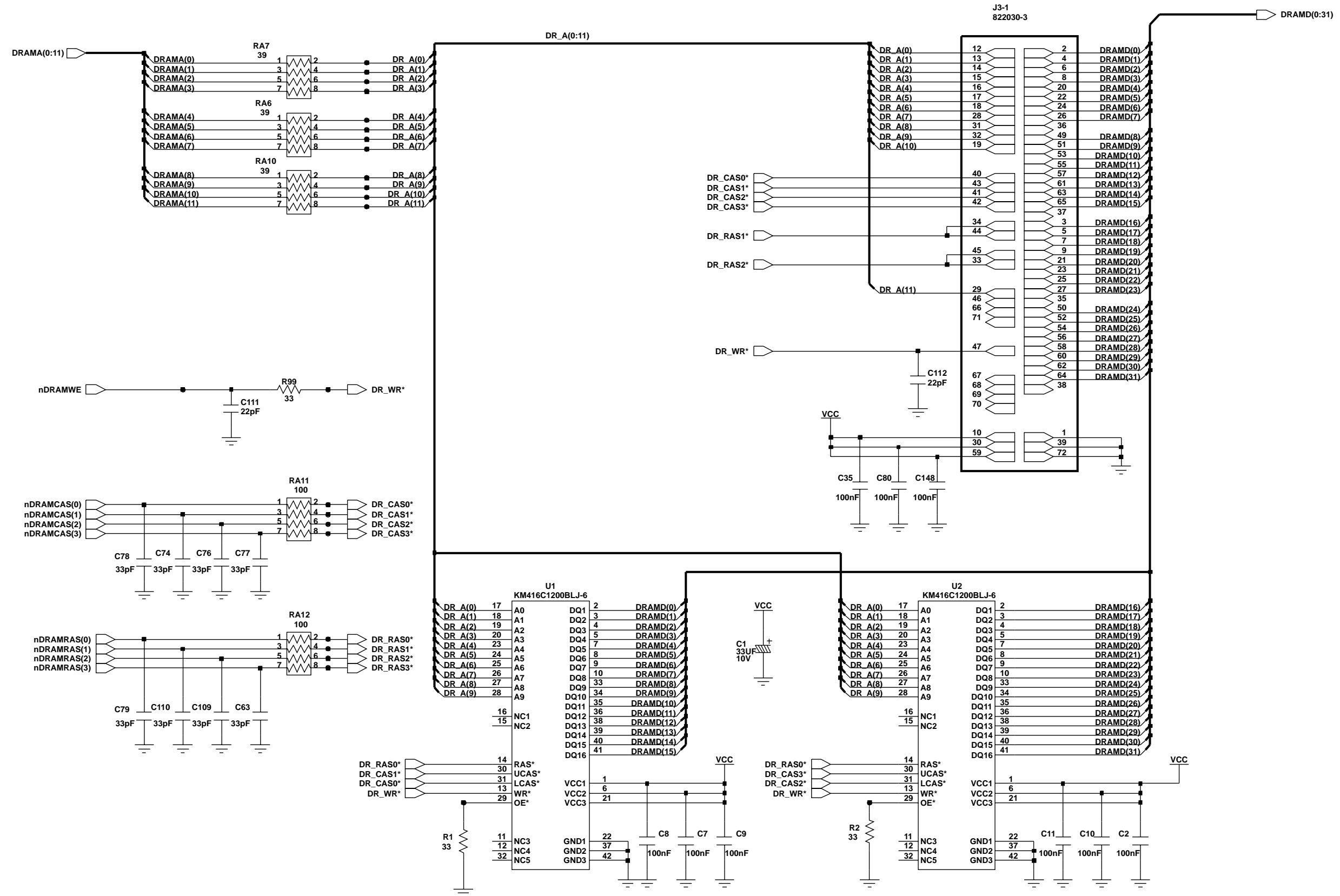
Controller Diagram(3/11)



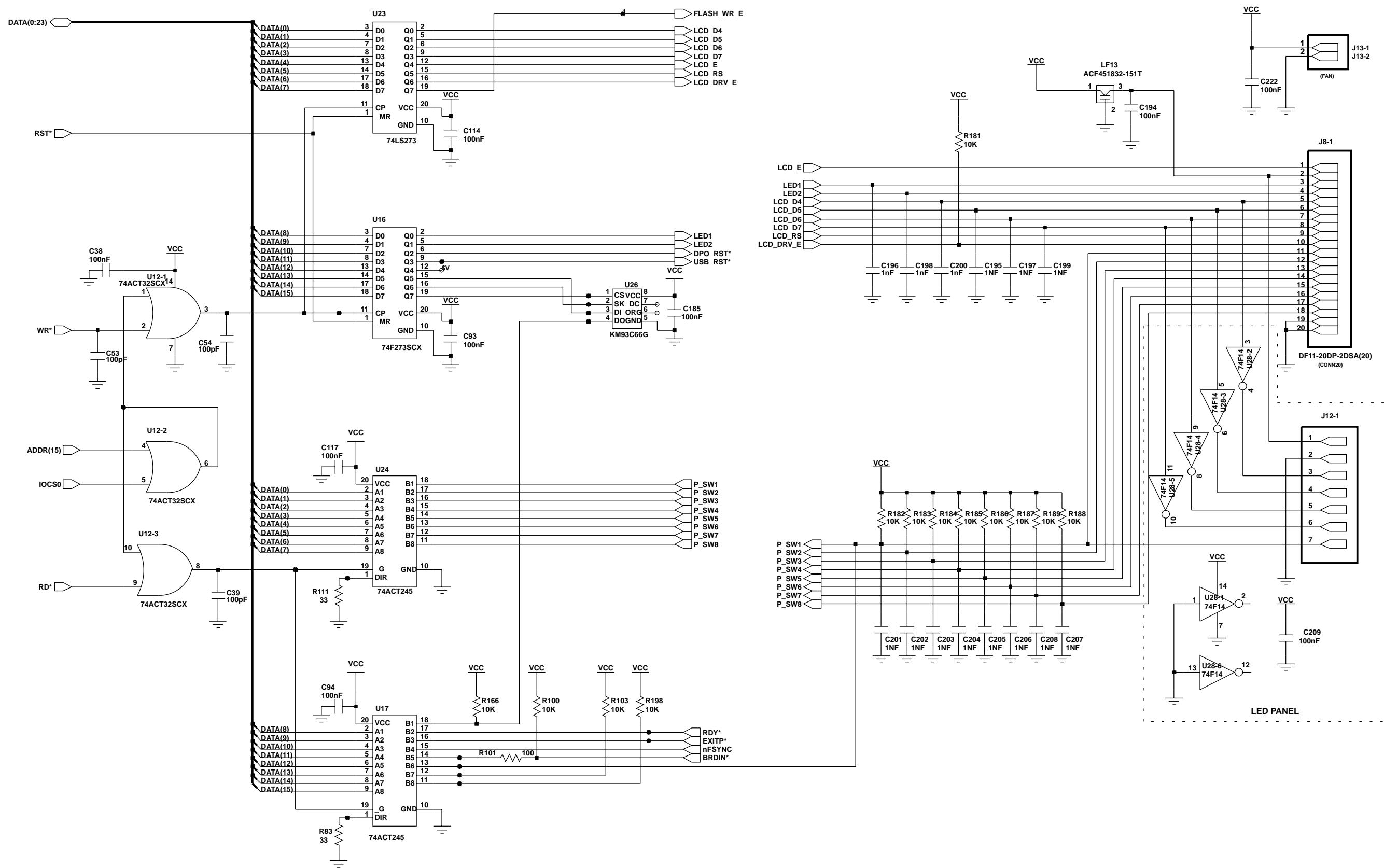
Controller Diagram(4/11)



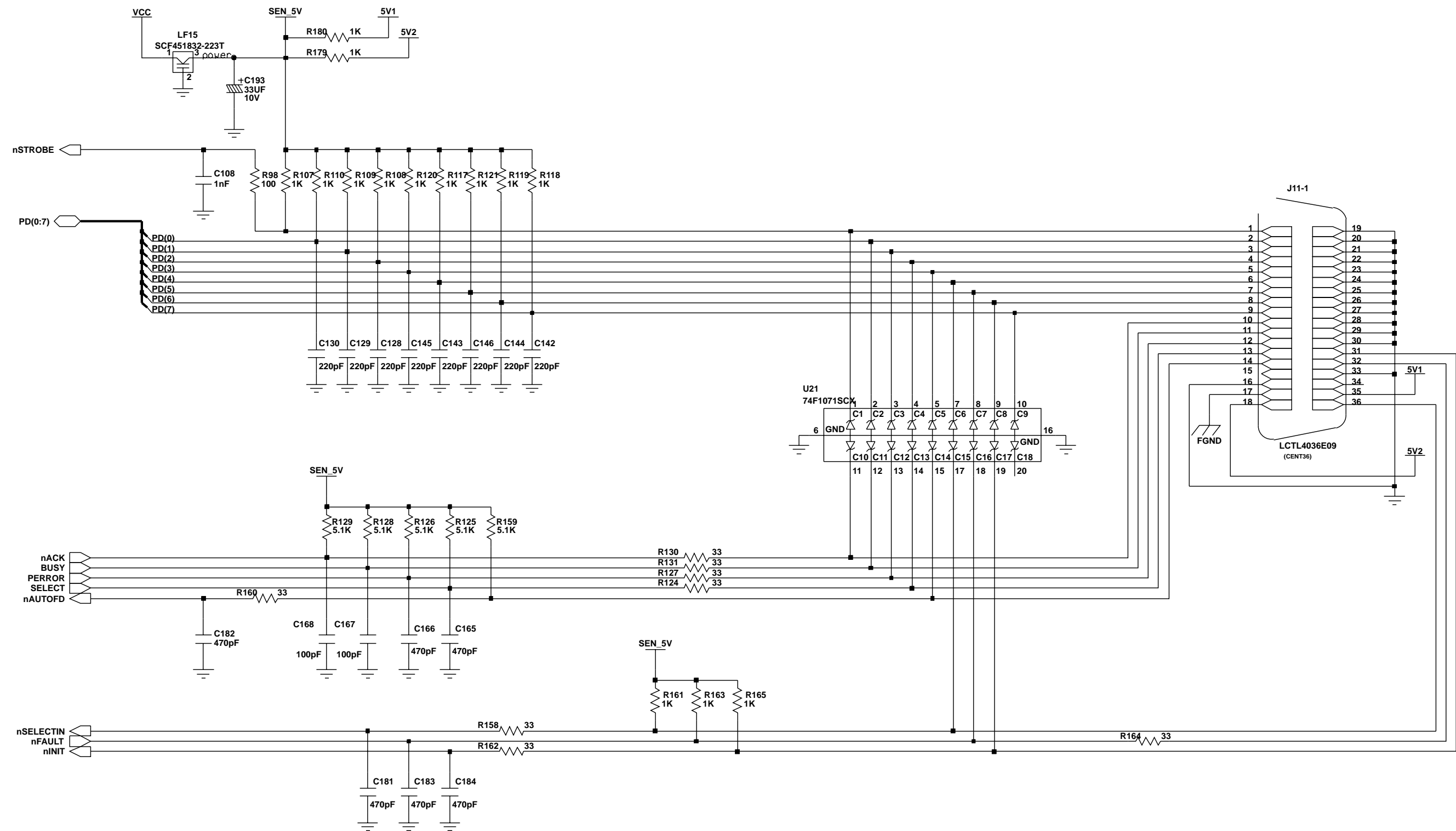
Controller Diagram(5/11)



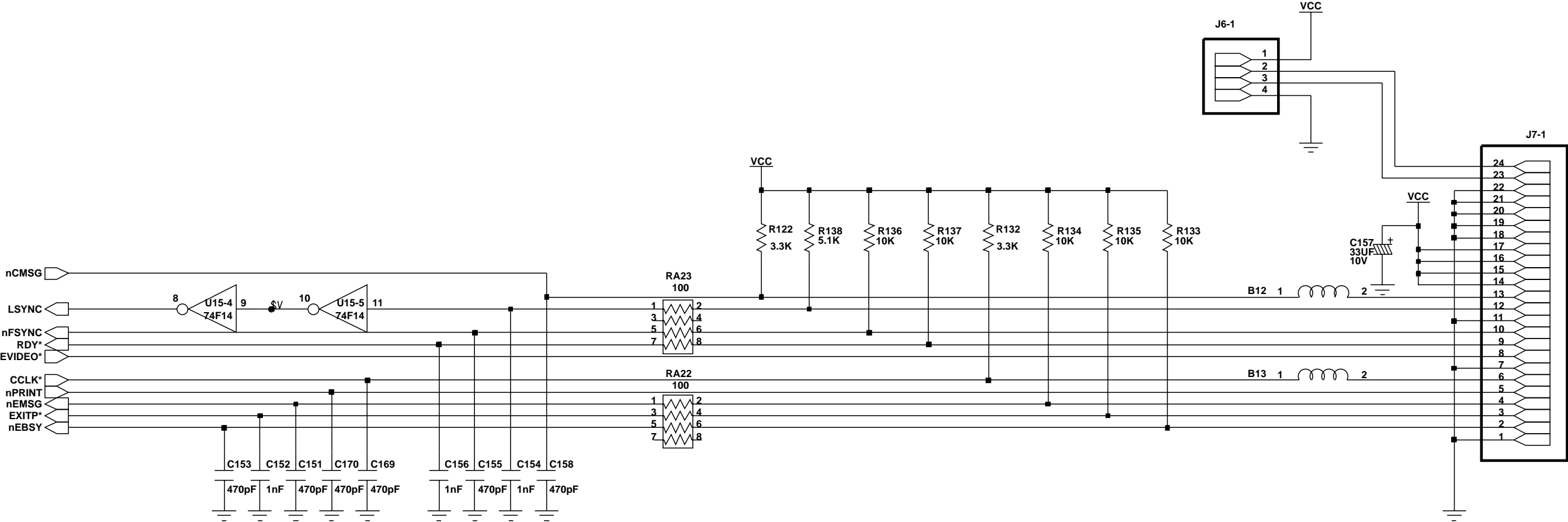
Controller Diagram(6/11)



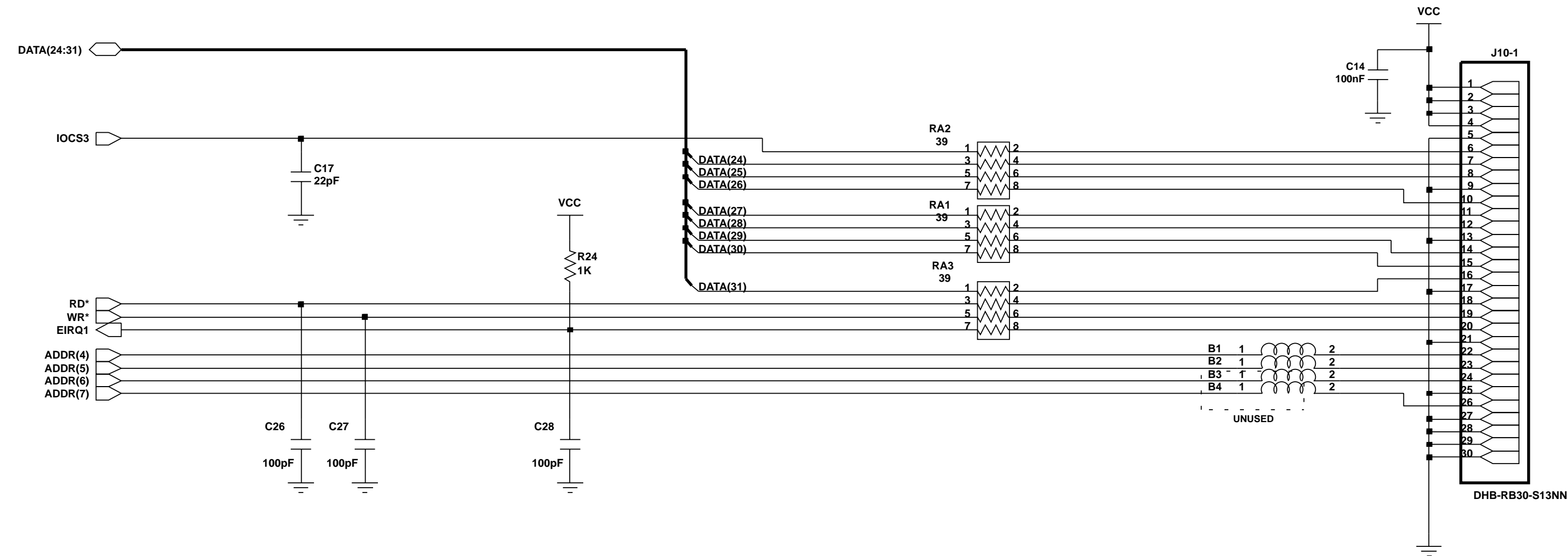
Controller Diagram(7/11)



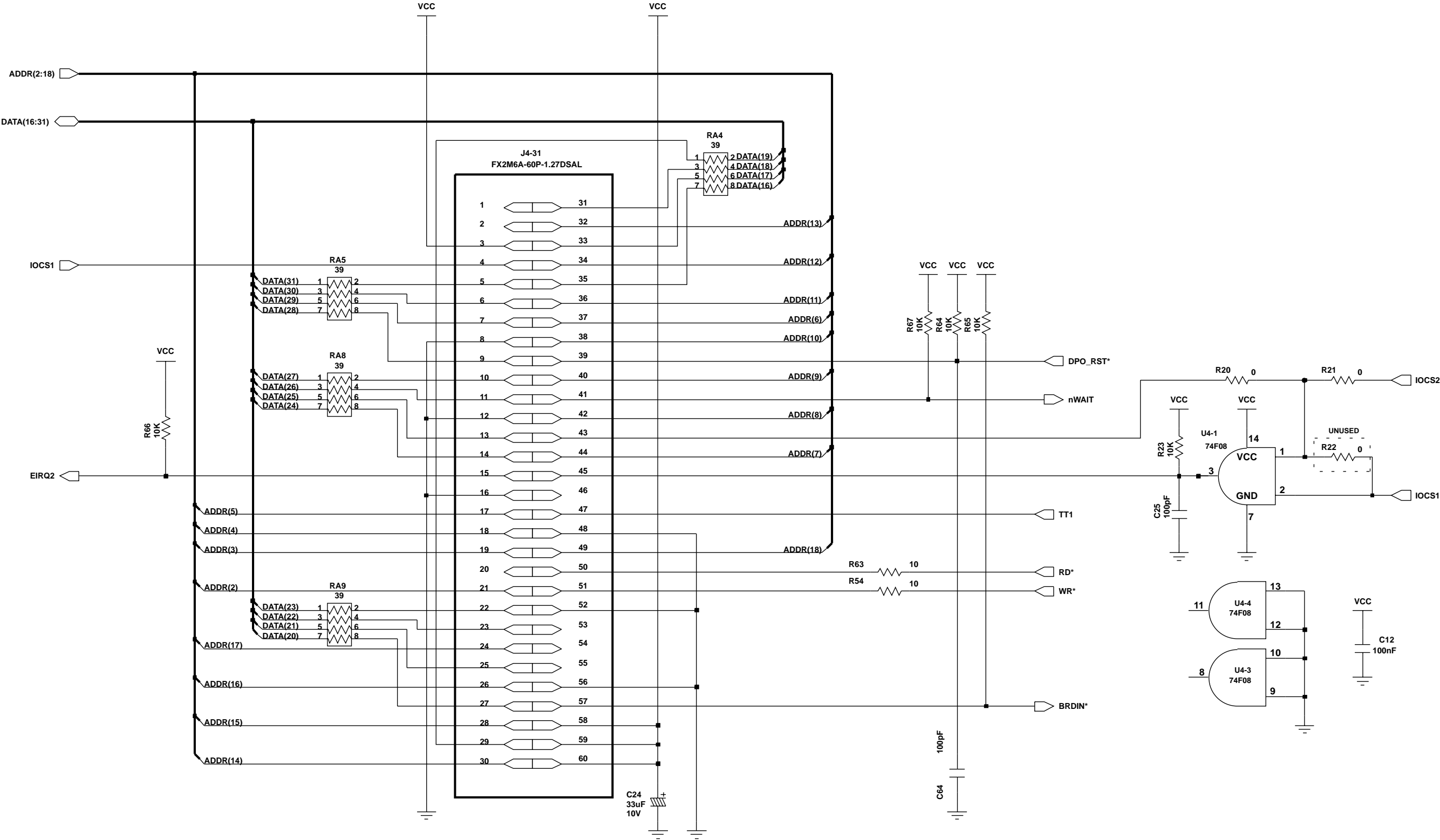
Controller Diagram(8/11)



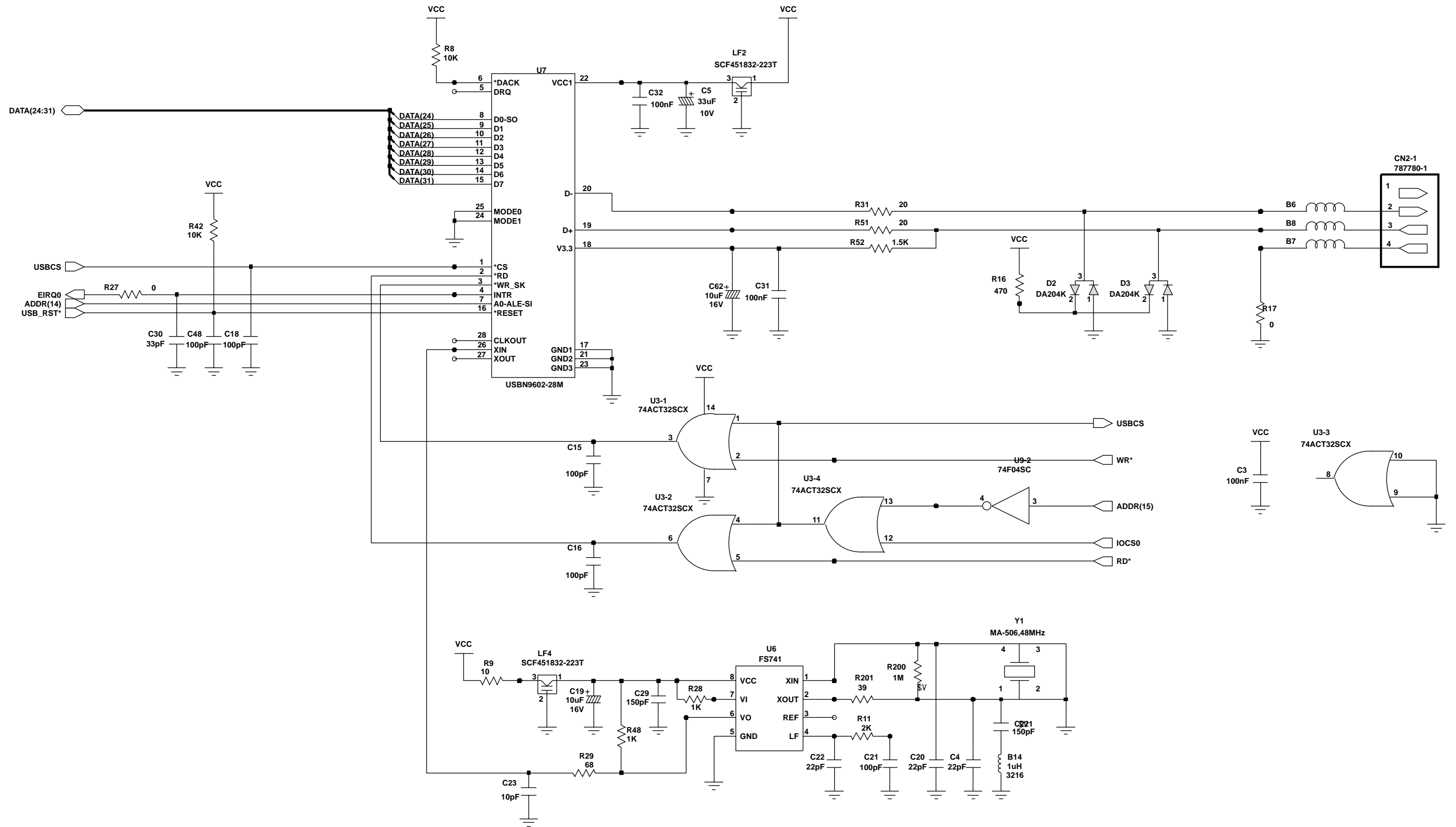
Controller Diagram(9/11)



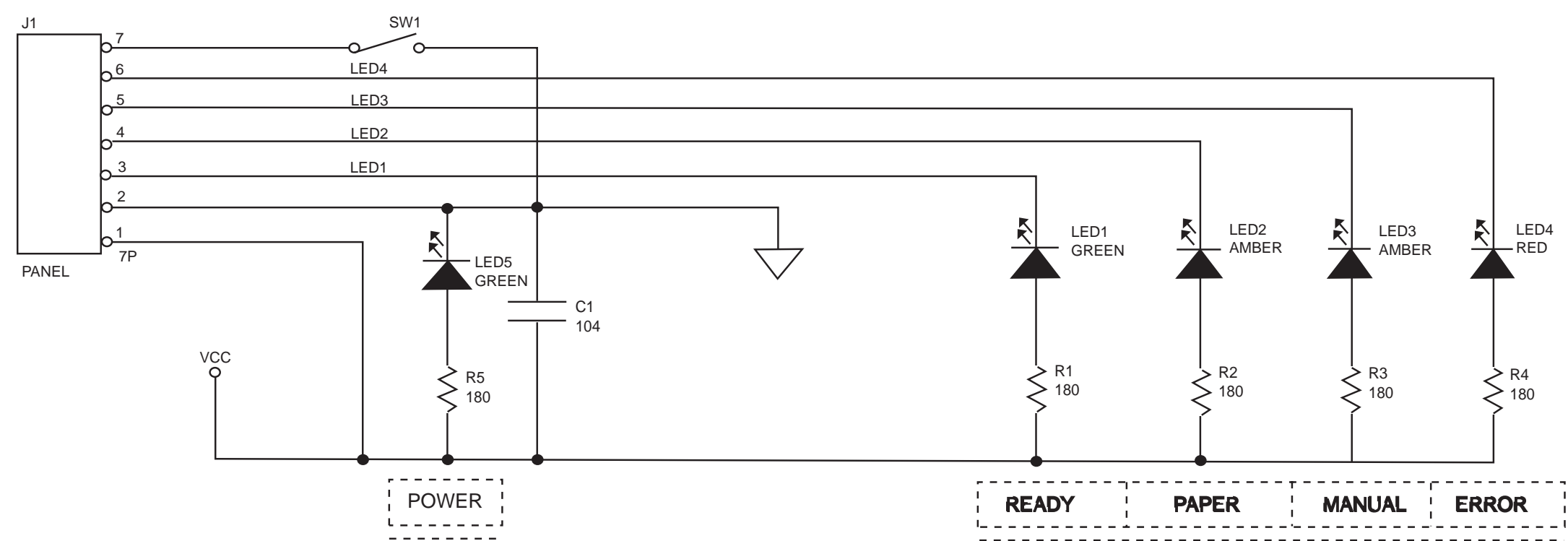
Controller Diagram(10/11)



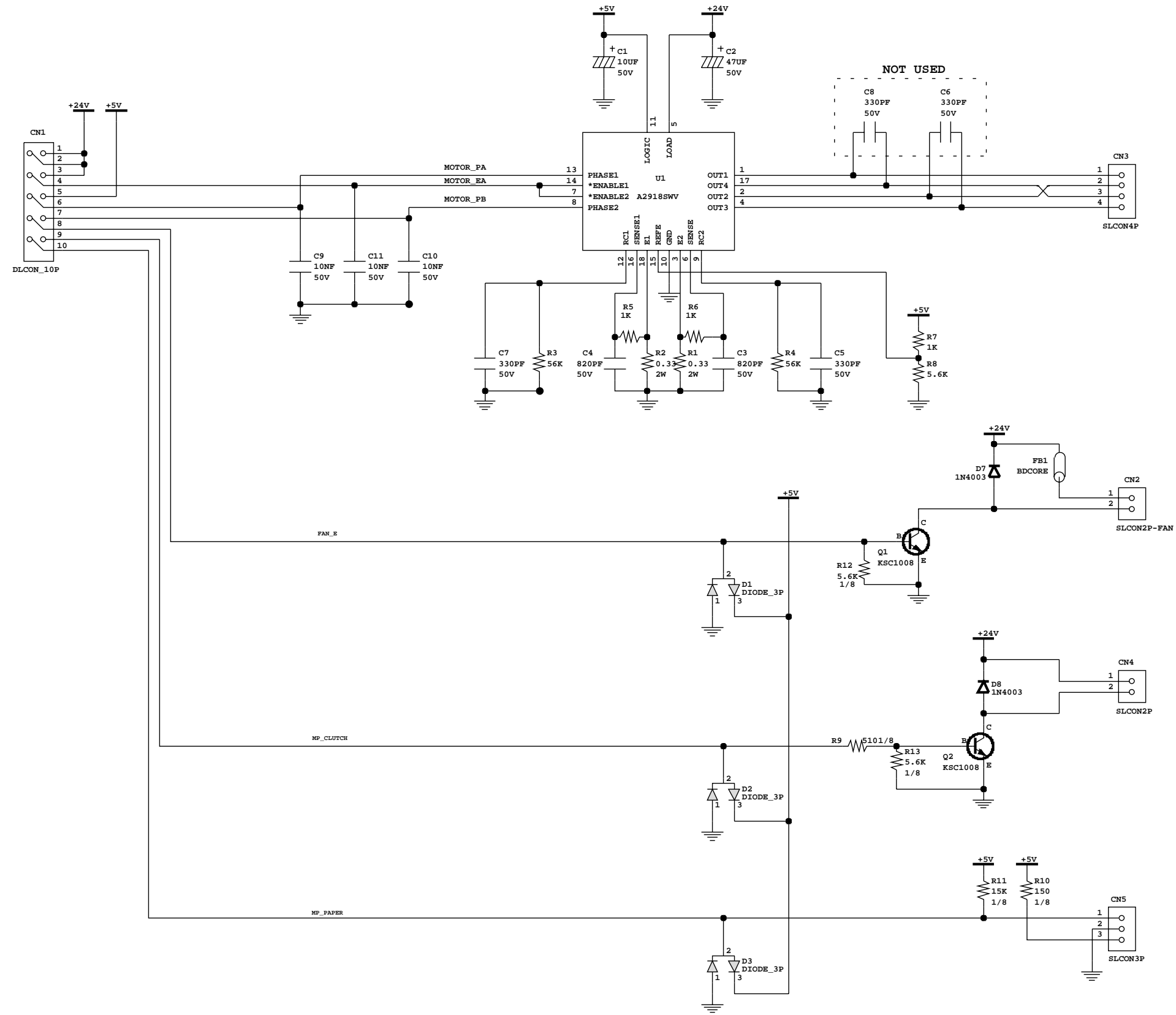
Controller Diagram(11/11)



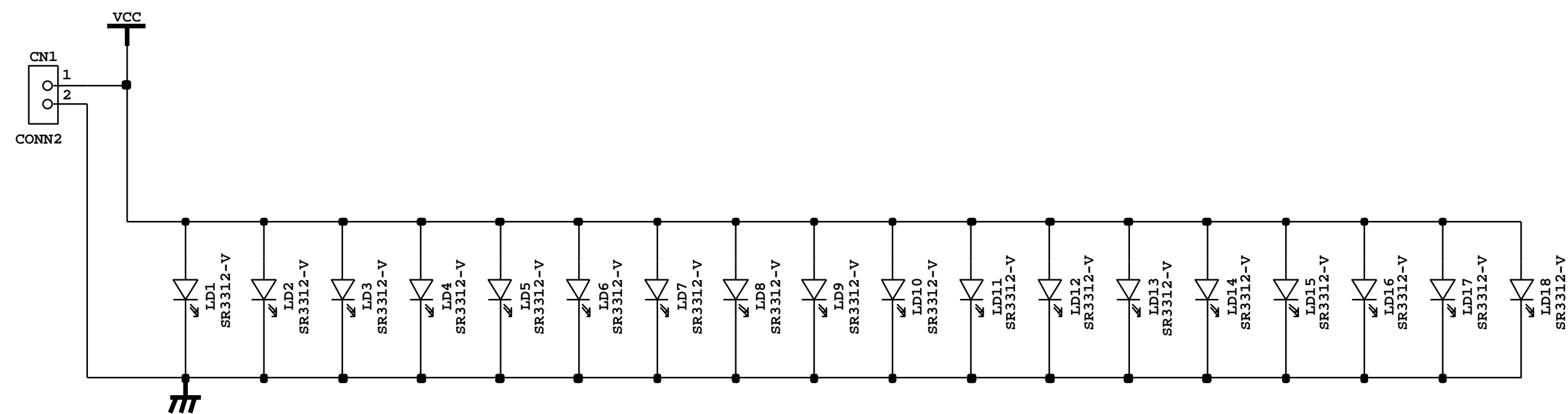
8-3. Panel Board



8-4. Motor-SUB Board Diagram



8-5. PTL Diagram



8-6. Localtalk diagram

